

AMERICAN ARTISAN and Hardware Record

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**AMERICAN ARTISAN
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**"HANDY"
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NEW IDEA**

Kwik-Lok
— FURNACE PIPE
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Founded 1880 by Daniel Stern

Thoroughly Covers
the Hardware, Stove,
Sheet Metal, and
Warm Air Heating and
Ventilating Interests

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LESSONS DRAWN FROM LIFE OF WANAMAKER.

John Wanamaker, the great merchant and philanthropist who died a few days ago in his eighty-fifth year, was a pioneer in many other fields than in the mere matter of buying and selling goods.

The average man, however, thinks of him as a merchant and as one of the first—if not the first—to abolish the hidden price. All goods were marked in plain figures and were sold at the price marked. There was no haggling in Wanamaker's stores, when people once became accustomed to the idea that he really meant what he said when he set down as one of the premier rules of his business that everybody was equal when it came to buying from him—nobody's money was better than anybody's else.

This principle was enunciated by John Wanamaker nearly sixty years ago and has been accepted by a large majority of merchants, but there still remains a goodly number who profess to believe that people in their locality are different from elsewhere, and that merchandise sold by them must be offered at one price and sold at a lower figure.

They may consider themselves honest and fair, but their attitude is wrong, and their number is gradually dwindling.

Another feature of Wanamaker's merchandising policies was that his business must be advertised—day in and day out—that his store could never be so well known that it would not be worth while to tell people where it was located, what he sold and the price at

which they could buy his goods.

He started his department store—the first in America—in the early sixties. His business grew much faster than Philadelphia; his name and his store were probably better known than anyone else's, and yet he felt that he must keep on—day after day—telling people about the Wanamaker store and the things he had procured for their wants and enjoyment.

But there are still those who appear to believe that people keep thinking of them all the time, and they fall into the opinion that when a need arises for a stove, or a furnace, or some gutter work, their place of business immediately rises to the mind of the person whose need is to be satisfied!

In the words of the slang poet: "Them Days Is Gone Forever."

Today, the man who gets business beyond a mere living is the man who goes after it—by personal canvas, by advertising regularly and constantly.

As Mr. Wanamaker put it many years ago: "If there is one thing on earth that a quitter should leave severely alone, it is advertising. To make a success of advertising one must be prepared to stick to it like a barnacle on a boat's bottom. Advertising doesn't jerk, it pulls. It begins very gently at first, but the pull is steady. It is likened to a team pulling a heavy load. A thousand spasmodic, jerky pulls will not budge that load, while one-half the power in steady effort will start it and keep it moving."

Random Notes and Sketches.

By Sidney Arnold

"What really does happen when the irresistible force meets the immovable body?" inquired the Youth Who Yearned after Knowledge.

"Well, it's been my experience that the glass usually breaks," replied Jim Robinson, of Hart Cooley Company, who has spent many golden moments struggling with the refractory windows of Pullmans, trolleys and ferryboats.

* * *

August Luedke, who is one of the "big guys" in the Milwaukee Corrugating Company, was taking a visitor through an art museum in Milwaukee where some of the works of the latest vintage of the "independents" were exhibited. The visitor had remarked that he could see nothing in a certain painting.

"You have an erroneous conception of the function of art," said August, "that painting isn't intended to be a picture of anything. It's merely the interpretation of the artist's state of mind when he painted it."

"I see," replied the Philistine, "but if he has that sort of a mind, why does he want to advertise it?"

* * *

H. B. Huffaker, who sells Wise furnaces and Pointer ranges in Iowa and Nebraska, was at a gathering the other night and as will happen these days, the talk had drifted around to prohibition.

"Well," announced the pompous talker, "I don't mind saying I used to drink when it was here, but I always knew when I had enough."

"Yes," spoke up his wife, "and so did every one else."

* * *

H. A. Beaman, who is in charge of the Front Rank furnace branch in Indianapolis, sends me the following story which I believe will be appreciated by most of my friends:

A spinster moved into one of the lower rooms of a furnished house and was testing the water faucet

when suddenly a whirring noise came from the upper region of the pipe, the outflow abruptly diminished in volume and then increased again with the cessation of the sound.

"What do you suppose does that?" asked the new lodger of her landlady.

"It's the young man upstairs turning on his faucet from the same pipe."

"But there it goes again," objected the spinster as the performance was repeated. "Each time I do it the young gentleman upstairs turns his on."

"Simply a coincidence — that's all."

"It may be," said the lady, still unconvinced. Then archly, "But somehow, I think that young gentleman is trying to flirt with me."

* * *

E. P. Wasson, of the Lennox Furnace Company, has a friend who delights in telling stories of what happened during the World War, and here is a good one, although possibly some of my friends among the ladies may not like it:

Little Chief Eagle Feather, when the war came along, had been yanked from his lonely reservation where he knew little of the ways of the palefaces and nothing of those of the paleface women, and stuck unceremoniously in the army as a private. He made a good soldier, so good a one that he was accorded one of the cherished three-day leaves to Paris, and one of his companions on the trip was instructed to see that he had a good time.

Welfare workers and other American women happened to be giving a dance for the soldiers on the evening the chief arrived and it was decided to attend. Hardly had the party entered, however, before the brave, casting one glance at the exaggerated dances and liberal use of cosmetics, made a break for the

door. Captured and asked for an explanation, he grunted:

"Me go back up front where me safe. Here lot of wild squaws go on warpath."

* * *

Jim Robinson, Vice-President of the Hart & Cooley Company, was in the dining car on a train for Chicago when he overheard the following conversation, which evidently had reference to a fellow passenger who had just finished his meal:

"But how on earth could you deduce that man was a slacker during the war?"

"At times, my dear Jones, your stupidity is positively childish. Did you not see that he ordered canned salmon and was actually eating it with evident enjoyment?"

* * *

My Home Town.

Big cities are all right, I guess,

They suit some folks maybe,
But just the same, my old home town

Is good enough for me.

I've traveled 'round, yes quite a bit,

The world's best things to see,
But I've decided my home town
Is good enough for me.

I've climbed the mountains steep
and high,

I've sailed across the sea,
But I maintain that my home town
Is good enough for me.

The old folks smile, life's race all
run,

The children laugh in glee,
And I insist that my home town
Is good enough for me.

If you should take the whole round
world

And offer me the key,
I'd rather live in my home town,
It's good enough for me.

And when my life on earth is done,
This then will be my plea,
"May Heaven be like my home town,

It's good enough for me."
—Pearl Holloway, Fremont, Nebraska.

Facts of Warm Air Heating and Ventilating.

Reports of Progress in Warm Air Heater Research Work.
Ventilating Factories, Theatres and Other Buildings.

Northern Institute Gives Course in Heating and Ventilating.

The Northern Institute, 1951 East 57th Street, Cleveland, Ohio, which Institute teaches Heating and Ventilating Engineering by mail, reports much activity in the development of its business.

This Institute was incorporated on November 1, 1922, having acquired the entire equipment and assets of the Cleveland Engineering Institute, including the complete membership of students. Early last spring the Educational Institute which formerly operated the Cleveland Engineering Institute made an assignment and a member of the present organization purchased the complete assets and continued to supply instruction to the students without a break throughout the summer. The change was in ownership only, and the students were not aware of this until informed.

The school "marked time" all summer as far as new developments were concerned and finally on November first was incorporated. This incorporation has merely served to strengthen the former organization with increased capital and business talent rather than to create any radical changes.

The present officers are:

President, George W. Roberts, a prominent heating and ventilating engineer, who is well known throughout the field, and a member of the American Society of Heating and Ventilating Engineers.

Vice President and General Manager K. L. Seelbach, who is an experienced engineer having a sound knowledge of both business and instruction supervision, and a member of the American Society of Mechanical Engineers.

Secretary, Henry F. Pollock, formerly Vice President of the McCaskey Register Company.

Treasurer, W. L. Seelbach, of the Walworth Run Foundry Company, a well known and able business executive.

These officers constitute a strong personnel which is administering the business interests of the institution with great efficiency. There have been only minor changes in the instruction departments, all for the better. Mr. Roberts remains as director as does Earl A. Davis as Chief Examiner. Mr. Davis has won the admiration of all students

by his effective work as the head of the Instruction Department.

An aggressive campaign for 1923 has been planned by The Northern Institute, and the new organization is determined to take care of its student family more thoroughly than they ever have been. The plans are certain to turn out trained men who will be a credit to their associates, employers and clients as well as to themselves in the knowledge which counts in greater income, efficiency and self-respect.

People Must Experiment with Furnace They Have To Save Fuel, Say American Engineers.

*Saving of 10 to 20 Per Cent Can Be Made
Declares Society in Announcing Rules.*

RULES to save coal in American homes have been drawn up by the fuels division of the American Society of Mechanical Engineers, which, in making them public recently, warned that consumers must be vigilant in economy if acute conditions are not to result from the threatened shortage.

New habits must be fostered and householders must be willing to experiment, according to a statement of the society, accompanying the rules, which were prepared by Prof. L. P. Breckenridge of Yale University, chairman of the fuels division, and Assistant Prof. E. H. Lockwood of Yale.

The rules, though described as of "the simplest nature," cover a wide range. They deal with preparation of equipment, kinds of fuel, and management of the furnace, involving instruction in burning large sizes of anthracite coal, coke and anthracite pea or buckwheat, wood and anthracite pea or buckwheat, and bituminous coal.

Large savings are possible if co-operation is general, the society's

statement said, continuing:

"The conditions brought about by the strike of the coal miners, coupled with the lack of transportation, again has made difficult the problem of supplying a proper amount of fuel to the American home. The high price paid for such fuel as is obtainable again emphasizes the necessity for the greatest economy in its use.

"People must be willing to experiment a little just now in order to see what it is possible to do with the furnace they happen to have. If this is done, there is no doubt that a saving of from 10 to 20 per cent of the fuel required can be expected."

The fuels division held a joint session with the Stoker Manufacturers' Association at the four-day annual meeting of the society, which was held at the Engineering Societies Building in New York City. During the war, it was stated, mechanical engineers aided in meeting fuel conditions by formulating rules to encourage economy. The present situation, in the opinion of the ex-

ecutive committee of the division, warrants the engineering profession in renewing assistance.

It is entirely possible, according to these experts, that necessity will compel more people to learn to burn the smaller sizes of anthracite this winter—a condition they regard as extremely desirable.

"There are on the market certain types of furnaces," it was stated, "in which soft coal cannot be expected to give satisfactory results. These furnaces are the ones which are cleaned with difficulty, they having been designed for hard coal and the necessity for frequent cleaning has not been present."

In their rules for the preparation of the equipment, the engineers urge that in mild weather supplementary heat through fireplaces, gas logs, kerosene heaters, etc., be provided; that grates be kept in good order; that steam and water pipes be covered to prevent unnecessary radiation; that air leakage be prevented as far as possible by leather strips and storm windows; that coal bins be arranged so that two kinds of fuel can be kept separate if desired; that provision be made for suitable cleanout tools for boiler flues and for recirculating air in hot air furnaces by convenient slides in pipes.

Who Is Your Competitor?

In the November issue of "Fitting Remarks," the well written little house organ of W. E. Lamneck Company, there is an article which points out in such a very striking manner the necessity for aggressive methods in selling that we are glad to give it further publicity, as follows:

Who Is Your Competitor?

Not considering the increased business brought about by the growth of a community over a period of time, the spending capacity of any community is absolutely fixed.

Whether Jones spends his money for a new safety razor, a stove, a swallow tail coat, a furnace, theater tickets or a radio outfit is all a matter of conjecture as far as either

you, the dealer, or even Mr. Jones himself is concerned.

Poor Jones, last month, may have wanted a new pair of brogans until the broadsides announcing the coming of "The Shriek" at the local theater caused him to dig deep for two tickets and a supper after the show.

Smith who is a great home man may have had his mind set on a new furnace until the advertisement of a beautiful kitchen cabinet attracted his wife's eye. Then Smith agreed with his wife that the old furnace could endure for another year—which was more than Mrs. Smith could do with the old kitchen equipment.

You may start out to buy a new suit of clothes but in passing a window you are attracted by a display of overcoats which appear to be real bargains. Then you reason that if you have the new overcoat it will cover the old suit and you can get the new suit the following month.

Why did you buy the overcoat?

Simply because the display in that window created in you the desire to have and to own that overcoat. And once that desire was created—to blaze with everything else. The same reason that Jones went to the show and Mrs. Smith bought the kitchen cabinet.

No matter what you sell, you compete with not only the men in the same line of business, but with everybody who sells anything. The spending capacity of any community is fixed.

Therefore, the man who gets the extra dollars the first of the month is the man who creates the desire to have and to own his kind of merchandise and his particular brand of merchandise. It's up to you to tell the public about it. Tell them by display, by printed advertisement or by personal salesmanship. Attract the buying eye as it passes your place of business. Convince it that what they need, at this particular time is your goods. Then you will get your share of the extra dollars.

People Need Moving, Cool Air, Says Authority On Health.

Former Health Commissioner of Chicago Points Out Necessity for Air Changes.

IN AN article, copyrighted by Dr. W. A. Evans, who served for many years as Health Commissioner for Chicago, he points out several fallacies which have been held in times past as "gospel truth" in the regard to the effect of warm air upon the physical well being of mankind of the domesticated sort.

This article which was one of Dr. Evan's daily contributions to the department of "How to Keep Well" of the *Chicago Daily Tribune* follows:

Skin Needs Fresh Air.

Most of the good effects of fresh air are due to the impact of air of low temperature on the skin, and most of the harmful effects of foul air are due to the depressing influence of quiet, warm air on the skin.

The old theory was that men threw off poisons in the air they ex-

haled. It may be they do, but, up to date, the finest chemical and bacterial tests have failed to show that there is such a poison.

The next theory was that the harmful effects were due to low oxygen and high carbonic acid content. The airplane knocked the last prop from under the first part of that theory. The record altitude flying and the laboratory experimenting done in connection therewith have established the minimum proportion of oxygen required in air for human use and the point at which it is necessary for the flyer to supply oxygen to the air he breathes. This point is well below any percentage ever reached in any living room, store or factory.

As to the carbonic acid content, it is proved that the human animal can stand far higher percentages

than are ever found in basements and subways, and that the reason for C O 2 standards in ventilation ordinances is that they may measure air stagnation, and not to estimate harmfulness directly.

People need moving cool air if they are to keep healthy, especially during the winter months. The temperature needed will depend upon what they are engaged in. If they are sitting quietly, and especially if they are along in years, a temperature as high as 70 is allowable. A temperature higher than that is always harmful except in bath rooms and nurseries at certain hours.

If the occupation is one entailing considerable muscular activity, the temperature must be well below 70.

Not only must the air be cool; it must be moving. A reasonable number of drafts, of reasonable force and temperature, are a necessity, but the draft business can be overdone.

Authorities are agreed now that even temperatures are harmful. For a room to be healthy, the temperature must rise and fall through several degrees.

Our fathers had an excellent plan and we will do well to follow it. every half hour, or hour, they would throw up the windows and blow out the foul air. Incidentally, they would lower the temperature of the room and freshen the air. As a rule, during this period of air freshening, the occupants of the room stirred around. Those who were about to fall to sleep over their books came to life.

Installer Disagrees Over Problem Put by M. Clague.

In the December 9 issue of AMERICAN ARTISAN a problem was put by M. Clague of Bethany, Missouri, as to which of two furnace pipes—one direct, the other jointed—would give a better take-off to the register. Here is an installer who takes issue with Mr. Clague's solution as follows:

In answer: "Which plan is better" written by Mr. Clague in

the AMERICAN ARTISAN AND HARDWARE RECORD December 9th, I beg to say after my first observation of the two sketches shown, my selection is sketch B. After reading the article I see we do not agree and do not believe we will unless Mr. Clague will change his belief.

While he does not give any explanation or reason why he prefers sketch A, my reasons are two: which I get from experience and tests. The first thing I want is to get the warm air started out of the casing. Sketch B has a more direct line and offers less friction getting started out of the casing than figure A and the 45° twelve inches from hood has less resistance than outlet on hood in figure A. I would prefer going up 18 to 20 inches from hood before using angle if the height of basement is suitable. For these reasons I find figure B the best for heating results.

The most essential thing of all is to get the air started out of the casings, then the warm air will continue to travel in nearly a horizontal pipe and with less danger of certain pipes being robbed at the hood.

My second reason is that Figure B is a much neater looking job, besides giving better headroom around the furnace.

In furnace installation we do not all agree on all matters but I believe we would get nearer together and get better installation by more such articles as Mr. Clague has started, and then give our explanation and reasons, and we to use our best judgment to get things nearer right. To do this one must be interested and like to study the installation of warm air furnaces, and he will learn and prosper.

Hoping in the above explanation of the two ways of starting the air from furnace hood I have made my reasons plain that Mr. Clague may understand me; I appreciate anyone who is so interested in this heating proposition enough as to give his opinion and ask questions, by which we all learn.

Yours very truly,

B. F. LICHTY.

—, Iowa, December 13, 1922.

Another Installer Favors Sketech B.

From Kansas comes a comment from another installer who agrees with the foregoing, as follows:

In regard to your sketch in the AMERICAN ARTISAN AND HARDWARE RECORD, as to how to take off the hot air run, my opinion is that sketch B is more practical and efficient. In the first place, Figure B gives more head room in the basement, especially if a run happens to come off over the door where you stand to fire the furnace. In the second place, giving the pipe a rise at the furnace gives the heat a chance to get a good start into the stack and a good start is over half of the battle. In Figure A the heat will strike the dome and whirl and finally drift out. I believe a job like Figure A will heat the basement more than Figure B.

Yours very truly,

JOHN McDONALD.

—, Kansas, December 12, 1922.

George B. Carr Is President of Reorganized A. P. Harder Furnace Company.

At a meeting of the Board of Directors of the A. P. Harder Furnace Company held recently at the Company's offices in Rockford,



George B. Carr, President of Reorganized A. P. Harder Furnace Company.

Illinois, President A. P. Harder presented his resignation which was accepted, both as President and General Manager.

George B. Carr, of Carr Supply Company, Chicago, was then elect-

ed President and a contract was entered into between the Company and Mr. Carr, by which he also became General Manager. Mr. Carr still maintains his control and active

the foundry building which is of steel and concrete construction and of the moulding floor.

The plant was built in 1919 and 1920 and is modern in every way—



View of Moulding Floor of A. P. Harder Furnace Company, Rockford, Illinois.

management of the Carr Supply Company.

Since that meeting the plant has been made ready for heavy production, additional space having been arranged in the foundry department, which is equipped with the latest machinery for furnace casting, all work possible being done mechanically instead of by hand.

It is expected that everything will be ready for actual production of the new warm air furnace, on which Mr. Carr will specialize, shortly after January 1, 1923.

This furnace will have a one piece radiator, a two section front, with a double fire door and several other improvements.

In the accompanying illustrations views are shown of the exterior of

both as layout and mechanical equipment—and has switching facilities on one of the important belt lines as well as with three of the big railroads serving the Northwest, so that shipments can be made with less trouble and delay.

Room and Floor Insulation Save Heat.

Proper installation of the new furnace is much to be desired and the installer may properly conclude his task ends there. But should it? Why not look around and observe all the physical conditions which enter into the proper heating and ventilation of the house, and then give the owner the benefit of some practical suggestions?

We all know we sometimes sleep cold on cold nights because we forget the need of a warm mattress or feather bed or cover underneath us. Some of us live in cold rooms because we forget the advantage of putting an overcoat on the floor.

Besides wrapping it up, there are some other methods of keeping the floor warm. Deadening placed between the floors and ceilings serves to keep the floors warm as well as to lessen sound transmission. A floor free from cracks will be warmer than one that leaks air. A tight air space below the floor helps. Therefore it saves heat to plaster the cellar or seal the underside of the floor joists where there is no cellar. A layer of paper under the cellar floor helps to keep it warm.

In many cases the cellar or furnace room is very much overheated. In the opinion of W. H. Driscoll, who writes on the subject in the Popular Science Monthly, a very warm cellar or basement, assuming that to be the location, means that the furnace is improperly constructed or is being operated improperly.

If the basement is overwarm, it is better that the rooms immediately over it should not have much insulation in the floor. The temperature of the floor is very apt to be affected by faulty construction in other parts of the room, since cold falls to the floor regardless of its point of entry.

Leaks around doors and windows make it almost impossible to keep the floor warm. In cold climates there is great gain in comfort and great saving of coal when double windows and doors are installed and when the windows are well stripped.



The Foundry Building of the A. P. Harder Furnace Company, Rockford, Illinois.

Nothing is gained by permitting leakage around windows. On a very cold day the difference between temperature on the inside and the outside will bring an abundance of air into the room, and it is well to have it come in at places designed for the purpose.

It is far better periodically to throw the windows wide open and freshen the air and lower the temperature than it is to permit a slow, constant leakage of cold, which flows straight to the floor and stays there.

Michigan Sheet Metal Trade Extension Board Has Interesting Meeting.

The meeting of the Trade Extension Board of the Michigan Sheet Metal Contractors Association, held in the Assembly Room of the De-



Frank E. Ederle Who Presided at Michigan Trade Extension Board Meeting.

troit Associated Building Employers, 2002 Real Estate Exchange building, December 12, was made memorable by the transaction of a volume of business and the interchange of many worthwhile ideas.

F. E. Ederle, who presided with Mr. Brundage of Kalamazoo as recording secretary, explained the

purpose of the Trade Extension Board of getting behind and promoting any and all plans and arrangements for the welfare of the public and the membership of the Association, as well as the manufacturers in their line, the Board being composed of one delegate from each local.

The morning session was devoted almost entirely to the furnace trade, particularly the necessity of proper financing methods for dealers who sell on the partial payment plan. Mr. Ederle pointed out the fact that one big item where the direct installer has it over the dealer is the selling plan of the direct installation manufacturer over the "through dealer" manufacturer, especially as regard to credits and long time payments. He said it is up to the manufacturer to devise or formulate some financing system where the dealer will not have to endorse the paper signed by his customers.

He pointed out further that the manufacturer cannot sell to the dealer and install direct with one organization; that everything is different—the appeal is to two different trades and they must be appealed to in decidedly different ways.

O. E. Jennings of the Michigan Stove Company and Mr. Smith of the Detroit Stove Works and G. J. Close of the Art Stove Company—the only manufacturers present—gave very interesting sidelights on the methods used by their companies, their experiences, etc., and all agreed that the manufacturers are ready to cooperate with the dealer in every way possible if the dealer shows he is "live" and anxious to go after business.

D. M. Marshall, newly selected secretary of the Detroit local, and Adam Martin of Saginaw, spoke for the dealers. One point brought out was that in case of direct installation, the man is a salesman whereas the average furnace dealer doesn't know how or will not go out after business. The dealer sells himself instead of something to meet real competition, while the "other fellow" sells his company.

In summing up the matter Mr.

Ederle called attention to the necessity of the exclusive agency. Dealers carry too many lines, he maintained, but with the right financing plan the manufacturer could force an exclusive agency. He also asserted that manufacturers were



making a mistake in not exercising more care in the selection of their dealers. "If you can't get the right dealer," he declared, "don't put on anyone. Wait until you do get the right one and in the long run you'll find it more profitable."

The discussion will be continued at the February convention.

The afternoon session opened with an interesting discussion on the elbow and mitre question. As none of the manufacturers were present it was agreed that Frank Ederle again take up the question of adopting "Michigan Standard" elbows and mitres with full authority to make contracts.

"Michigan Standard" galvanized steel came in for its share of discussion and all expressed extreme satisfaction with the sheets themselves as well as with the treatment and cooperation given by the manufacturer and representatives.

Representatives of several state manufacturers were present and gave very interesting information on slate roofing; also, invited the Association to be represented at the annual convention of the National Slate Association in New York, January 25 and 26, at which time the matter of a national slate advertising and publicity campaign would be given serious consideration.

After going on record as being in favor of vocational training and every possible step in the improvement of the trade, the meeting adjourned until convention week.

Practical Helps and Patterns for the Tinsmith.

Aids to the Improvement of Craftsmanship and Business.
News from Various Branches of the Sheet Metal Trade.

PATTERNS FOR OCTAGONAL BRANCH.

By O. W. Kothe, Principal, St. Louis Technical Institute, St. Louis, Missouri. Written especially for *American Artisan and Hardware Record*.

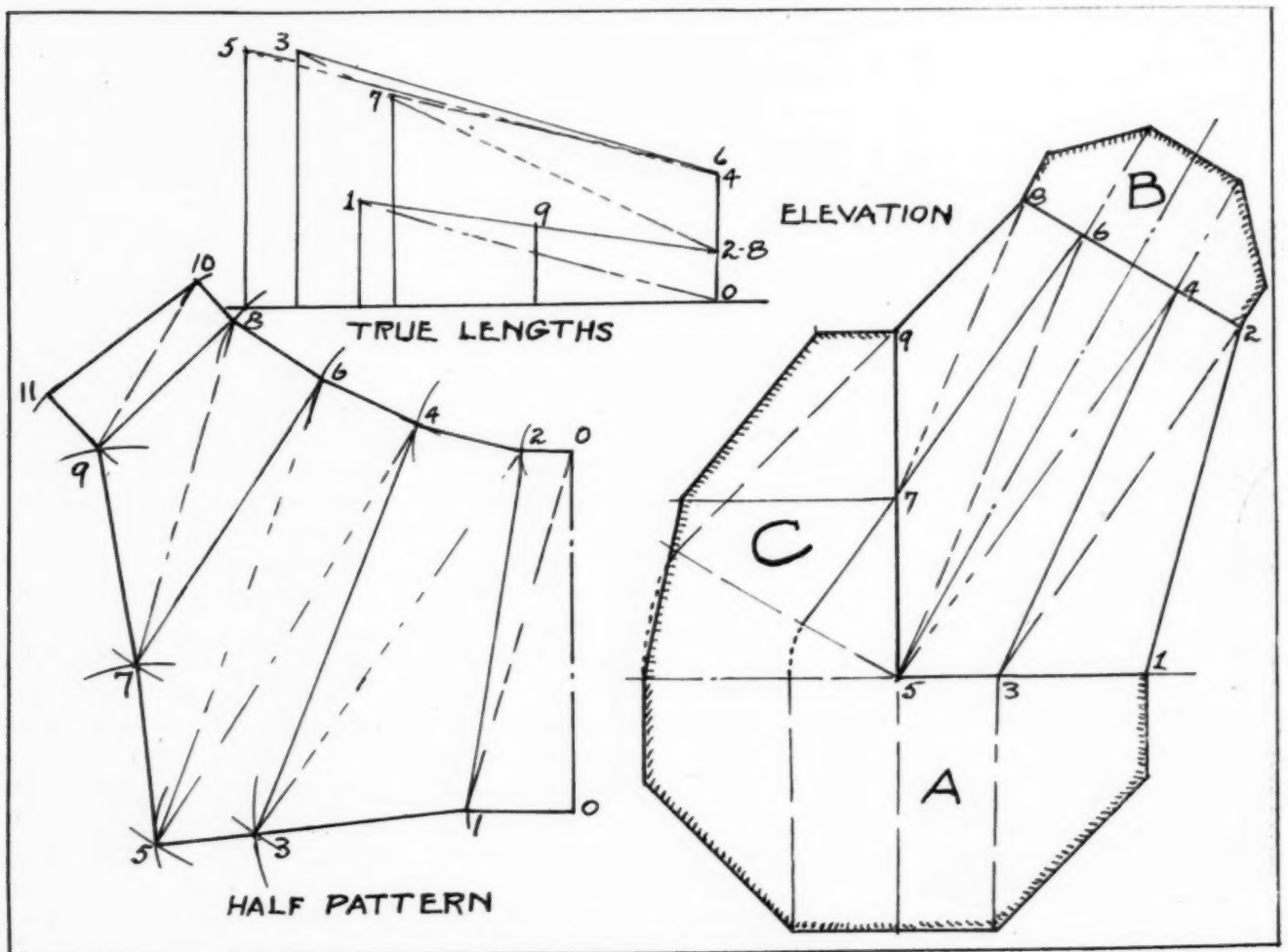
As a problem of development, the octagonal branch is interesting, in that it shows its features clear as

the mere pattern drafting is more for the layman mechanic, while the design, proportion and engineering part of it as well as the pattern drafting, is for the foreman, superintendent and employer.

In taking on our branch in this drawing, we first draw the axis line of branch and proportion the base to section A and then draw section B, after which section C is devel-

the true flare between the points of the section and produces the true lengths.

After this the pattern can be set out by drawing a line 0-0 equal to 1-2 of elevation. Then square out lines in patterns as 0-1 and 0-2, making those distances equal to the points in section A and also in B, which will give lines 1-2 in pattern. This can also be done by picking



Designs for Octagonal Branch.

an instruction problem, than a round branch. Sheet metal construction is one of geometry and hence pattern drafting forms part of the sheet metal worker's education; but it is not all that is required. The matter of design and proportion and calculation is equally important to the laying out of patterns. In fact,

oped. After this the elevation is divided into triangles and for these triangles diagram of true lengths is constructed. That is picking the lines from the elevation as 2-3; 3-4; 4-5; 5-6, etc., and setting them on a horizontal line in diagram, after which lines are erected to equal those in the sections. This will give

line 0-1 and setting as 0-1 in pattern and then picking line 1-2 in diagram and setting as 1-2 in pattern. Then pick the octagonal line from B and also from A and strike the arcs 3 and 4, as shown. Cross these lines with true lines 2-3 and 3-4 from diagram. Repeat in this way until points 10-11 are established and

draw lines through all points where arcs cross and the pattern is finished. Laps for assembling should be allowed extra.

Iowa Sheet Metal Men Publish Monthly Paper.

Volume 1, Number 1, of *The Iowa Sheet*, the monthly bulletin for the membership of the Iowa Sheet Metal Contractors' Association, has just been published.

Its appearance is good, and its contents are of interest to the Iowa sheet metal men.

"We quote from the "editorial page":

The Iowa Sheet is published by the Iowa Sheet Metal Contractors'

Association and will appear about the first of each month. It will contain items of interest to all sheet metal contractors in the state. Its columns are open to any one interested in the sheet metal business, and readers are invited to send in any articles for publication. If you have anything for the good of the Association let us have it. If you have a particularly interesting piece of work write it up and send pictures or drawings illustrating it.

"Space will be given to each Local Association for news of their organization. The Local Secretaries will please send in these items on or before the 20th of each month. Every meeting of your Local should be reported."

Copper and Brass Industry Now in Strong Position as Domestic Consumption Grows.

President Agassiz of Association Points Out Campaign Has Eliminated Foreign Influences.

THE copper and brass industry is now in a strong position, having absorbed an unprecedentedly heavy volume of war-time scrap and having developed a domestic market, which from now on will mean an emancipation, more or less, from foreign influences.

This is the gist of a message delivered by R. L. Agassiz, president of the Calumet and Hecla Mining Company, before the Copper and Brass Research Association recently, and because of the authority of the speaker, we are glad to publish excerpts of his conclusions, as follows:

"The research and educational work of the Copper and Brass Research Association has played an important part in the rapid growth of consumption of brass and copper during the past year—for, despite uncertain business conditions, copper consumption in this country is now substantially greater than in pre-war years. Having digested an unprecedented quantity of war-time scrap metal, the industry is now in a strong position.

"The underlying purpose of this whole effort is to develop to the

maximum the domestic consumption of the metal. Export trade will always be a large factor, but it will be possible, we believe, to so augment the American use of the metals that the varying industrial pulse of Europe will be much less influential in determining the prosperity of the industry.

"In this connection, it is interesting to note that while the 1922 consumption of copper and brass in the building industry in this country was about 150,000,000 pounds (an increase of over 100,000,000 pounds as compared with 1921), yet, the potential market for copper and brass in the building industry is placed at approximately 650,000,000 pounds annually.

"The constantly growing domestic use of brass, which is only next to the electrical industry as a consumer of copper, is another helpful factor.

"The electrical industry, where the physical properties of copper are indispensable, is in reality only in its infancy. The high cost of fuel, with uncertain and expensive transportation, are responsible for

the growing use of electric power generated at central points, distribution over wide areas being possible economically because of copper's high conductivity.

"Our plan is to provide through the instrumentality of the Copper and Brass Research Association a technical and advisory service which may be freely called upon by users of our metals—a service which no one copper or brass producer or manufacturer could reasonably be expected to undertake alone. Already, wide use is being made of these facilities. Information has been furnished on the use of copper and brass for almost every conceivable subject, from safety pins to locomotive boiler tubes.

"An important accomplishment has been the fact that many of the more than 2,000 manufacturers who produce articles made of brass or copper have taken advantage of the Association's activity to individually advertise their products, thus extending the Association's own educational work.

"The Association has found a ready response all over the country to its campaign directed toward eliminating waste in industry and in the home by the use of non-corroding metal, a waste the size of which is demonstrated by a survey conducted by the Association, showing that rusted metal in homes alone costs home-owners more than \$600,000,000 annually—about five or six times as much as the fire loss."

At the second annual meeting of the members of the Copper and Brass Research Association, held December 5th at the offices of the Association, 25 Broadway, New York City, the following were elected directors to serve for the ensuing year, the first eight mentioned comprising the Executive Committee:

R. L. Agassiz, President, Calumet & Hecla Mining Company; Walter Douglas, President, Phelps Dodge Corporation; C. F. Kelley, President, Anaconda Copper Mining Company; Stephen Birch, President, Kennecott Copper Corporation; Charles Hayden, Vice-Presi-

dent, Chino, Utah, Nevada Ray Companies; F. S. Chase, President, Chase Rolling Mills; E. W. Binns, President, C. G. Hussey & Company; H. J. Rowland, Sales Manager, Rome Brass & Copper Company; J. W. Allen, Treasurer, Green Cananea Copper Company; Henry F. Bassett, President, Taunton-New Bedford Copper Company; H. C. Bellinger, Vice-President, Chile Exploration Company; F. H. Brownell, Vice-President, American Smelting & Refining Company; J. Parke Channing, Vice-President, Miami Copper Company; Carl F. Dietz, President, Bridgeport Brass Company; B. Goldsmith, President, National Brass & Copper Company; E. O. Goss, President, Scovill Manufacturing Company; Robert H. Gross, President, The East Butte Copper Mining Company; U. T. Hungerford, President, U. T. Hungerford Brass & Copper Company; C. V. Jenkins, Treasurer, Utah, Chino, Ray Nevada Companies; H. B. Paul, Auditor, Calumet & Arizona Mining Company; R. M. Raymond, Director, United Verde Extension Mining Company; A. E. Seelig, Manager, Michigan Copper & Brass Company; W. Parsons Todd, Manager of Sales, Copper Range Company.

The directors, at an organization meeting immediately following the annual meeting, elected the following officers:

President, R. L. Agassiz.

Vice-Presidents, C. F. Kelley, F. S. Chase, E. J. Rowland, Walter Douglas and U. T. Hungerford.

Treasurer, Stephen Birch.

Secretary, G. A. Sloan.

Manager, William A. Willis.

Saginaw, Michigan, Local Entertains Ladies.

The Saginaw, Michigan, sheet metal local observed Wednesday, December 6th, as "Ladies Night." A dinner at the Fordney Hotel was followed by a three-minute business meeting, after which the entire party of members and wives—twenty-six in all—was escorted to the Jeffries' Strand Theater, and enjoyed the performance from a box.

What Is the Matter With Modern Methods of Galvanizing Sheets?

Certain Metallurgists Claim That Zinc Coating Is Too Thin, While Others Say That Trouble Is With Basic Metal.

THE following article appeared in the November 16th issue of *The Iron Age*, and because of the interest which all sheet metal contractors naturally have in the matter of galvanizing sheets, we are glad to give it further publicity, with the suggestion that our columns are open for the fullest discussion by users and manufacturers of this important product:

Galvanizing at Fault.

In the October number of *Mining and Metallurgy*, the official publication of the American Institute of Mining and Metallurgical Engineers, New York, is an article entitled "What Is the Matter With Modern Galvanizing?" by J. A. Singmaster and G. F. Halfacre of the New Jersey Zinc Company. The authors say that they have examined about 50 samples of galvanized sheets of recent manufacture, obtained from 36 manufacturers in the United States, and find that the weight of coating on these sheets varies from 0.62 to 1.9 ounces per square foot, with but five of the samples in excess of 1½ ounces per square foot. They contrast these weights with the minimum weight of 2 ounces per square foot of sheet required by the majority of buyers of sheet under specification, and then ask: "Is it any wonder that galvanized iron, which, according to Webster, is 'iron coated with zinc to protect it from rust,' fails prematurely and brings all galvanizing into disrepute?"

The authors add that the situation as regards wire is worse, also that the roofing industry has been driven in self-defense to stringent specifications on the weight of coating of the nails used to fasten its products.

In conclusion, the article says: "We believe it is to the mutual interest of the iron and zinc industries to co-operate in measures for

the return of galvanizing to the heavy coated work and the re-establishment of the reputation of this material, rather than to surrender the field to substitute materials which in many cases contain neither metal."

The Iron Age has brought the criticism referred to above to the attention of a number of manufacturers of galvanized sheets with the suggestion that they comment upon it if so disposed. Responses have been received from a few of them. Among the letters is the following from the Research Department of the American Rolling Mill Company, Middletown, Ohio, written by J. A. Aupperle, Director of the Department:

Durability of Coating in Relation to the Character of Base Metal.

"The American Rolling Mill Company realized many years ago that the durability of iron and steel depended very largely upon the galvanized coating, and it has been our endeavor to put the maximum weight of galvanized coating on iron sheets which the product will permit. On sheets which require forming and stamping, the galvanized coating rarely gets below 1 ounce per square foot, while on culvert material we have always used a minimum coating of 2 ounces per square foot on all pure iron.

"We have found that a pure base metal influences the purity of the zinc coating, and from the hundreds of analyses which we have made we have found the percentage of iron to be considerably less in the coating on commercial pure iron than in the same weight coating on commercial steel.

"We have done considerable research work on galvanized coatings and have tested such material under all sorts of conditions. We have recently tested galvanized coatings subjected to a saturated solution of alum, at room temperature, and

have found that the galvanized coating on copper-bearing steel or copper-bearing iron is attacked five times as fast as the galvanized coating on pure iron. These tests were made by using different grades of material, each grade, however, containing as nearly a 2-ounce coating as it was possible to secure.

"An alum test is easy to make and the results are very conclusive. Alum is used by many cities for the purpose of purifying city water.

"We believe that the article by J. A. Singmaster and G. F. Half-acre overstates the conditions existing in the manufacture of galvanized sheets. It is not a fact that manufacturers reduce expenses by skimping in the amount of zinc used in their finished product. The tight-coat sheets containing the light weight coating have been developed to meet severe drawing and forming operations. We have found that the more impure the coating, the thinner such coating must be in order to stand severe forming; on the other hand, we have found that pure iron which carries a pure coating can carry a heavier coating and still stand severe forming operations.

"The authors have directed attention to the life of the modern galvanized gutter or leader pipes. The authors do not say what they observed when such products are examined. It is a fact, however, that galvanized gutter or leader pipes, made from pure iron, are giving good service under many different kinds of atmospheric conditions in this and foreign countries.

"We would welcome any law which would require branding of galvanized products with the weight of zinc coating, as for many years we have followed this practice on some of our products.

"We concur in the opinion of the authors that the weight and purity of zinc coating are important factors in galvanizing on which the durability of the sheet depends. The accompanying photograph emphasizes this point very clearly. Two sheets of pure iron and one of copper-bearing steel were exposed to the atmosphere at Pittsburgh for 42

months. The copper-bearing steel carried more coating than the pure iron.

"The copper-bearing sheet was covered with red rust while the coating on the two sheets of pure iron was but slightly attacked. The greater durability of these sheets containing a galvanized coating is realized when we compare the life of these galvanized sheets with the same material ungalvanized. Uncoated pure iron, 22 gauge, when tested by the American Society for Testing Materials at Pittsburgh, lasted about 22 months, while the galvanized coating was but slightly attacked after almost twice as long exposure.

"The galvanized sheets were 26 gauge, while the uncoated sheets tested by the American Society for Testing Materials were 22 gauge, or 67 per cent heavier than these galvanized sheets. These tests prove conclusively that a pure coating is more durable than the impure zinc coating on steel."

What the Good Architect Should Know About Zinc.

"What does the architect want to know about zinc?" is a query propounded by Sullivan W. Jones, Technical Director Committee on Structural Service, American Institute of Architects, in "Make It of Zinc," the official publication of the American Zinc Institute. Mr. Sullivan proceeds to answer his own interrogatory in the following fashion:

"He ought to know all about the service performance of the material in each of its many fields of utility. He ought to know on what elements, qualities and characteristics these performances depend. He ought to have at his command the information with which the zinc salesman, who is a good salesman, is equipped. He ought to know enough about zinc to know that his decision to use it is the right decision in the circumstances and can be fully justified.

"It must not be forgotten that the architect's service, his commodity,

is his ability, not only to create the beautiful, but also and equally important, his ability to make wise decisions in the selection of materials and methods with which to give his architectural conception concrete, sensible form.

"To be more specific, the architect ought to know what is the life of zinc as a roofing material, for example, or in the form of gutters or leaders and flashings under various atmospheric and service conditions. He ought to know under what conditions zinc should not be used; the presence of what impurities will result in failure, and how the presence of such impurities can be detected.

"It is not enough for the zinc industry to assert that zinc is everlasting. The assertion is important but it should be made by the architect for, what are to him, good and sufficient reasons. It should be the aim of the zinc industry to give the architect those good and sufficient reasons. The aim should be to make the architect a zinc salesman.

"The architect ought to know whether zinc as produced today is the same material as that produced fifty or one hundred years ago, upon the service performance of which the claimed longevity of the modern product is based. *Is there in connection with zinc, as with copper, a fractional percentage of impurity which makes all the difference between a material that will last indefinitely and one that will be short lived.*

"For instance: What causes the white incrustations that are sometimes observed on zinc sheet and result in punctures?

"The architect ought to know how to use zinc, how to apply it so that it will render its best service. Should it be used as tin is used, or as copper is used, or as lead? Are there any precautions to be taken to care for possible expansion and contraction? Does zinc require any unusual or particular type of fastenings? Should it be permitted to come in contact with other metals?

"The architect ought to know how zinc looks as a roofing mate-

rial applied in sheet and in unit form. He ought to be able to picture a zinc roof and judge whether or not it will harmonize in color, texture and form with the other materials he is going to use. The architect may be convinced that zinc is a lasting roof covering but to say to himself 'I will use it,' he must be satisfied that it will look well on the particular structure. As an asset in selling zinc to the architect, I question the efficacy of the slogan 'The roof that's always new' because probably the one thing that most architects strive for, particularly in connection with domestic architecture, is an impression of age. Probably the slogan was intended to suggest permanence only, but it does germinate in the architect's

mind this other thought and consequent reaction.

"I will not attempt to formulate specific questions relating to the many other uses of zinc. The points made in connection with roofing and sheet metal work develop certain fundamentals which lend themselves to a general application.

"So much for what the architect ought to know. Of equal importance is how he ought to be told what he ought to know. Indeed, the amount of knowledge imparted depends largely as in the case of teacher and pupil, on the method employed.

"In connection with publicity and direct advertising there are a few essential principles which can be briefly stated. They ought to be

recognized and set up as guide posts on the road to the architect's interest. They are:

"1. Assertive statements should be avoided. If claims are made they should be supported by the testimony of recognized disinterested authorities.

"2. Every piece of advertising copy should convey some useful information about the product—the more useful the better within reason.

"3. Publication for mail distribution should not be larger than 8½ by 11 inches, nor smaller than 7½ by 10⅝ inches. If they contain information which is intended for filing they should be indexed on the cover under the A. I. A. Standard Classification."

What Repair Man Needs to Know About the Automobile Radiator.

*E. E. Zideck Explains What It Is,
What It Does and How It Works.*

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by E. E. Zideck, Chicago.

Lesson 2.

How Water Keeps the Engine Cool.

WATER, made to circulate between radiator and engine, enters the engine jackets cold or nearly so. It *absorbs* their heat. Heated, it flows back into the radiator. The radiator *absorbs* the heat from the water and *radiates* it into the air. *Cooled* water flows back into the jackets, heats up, passes into radiator, cools, again enters the jackets and again heats up, cools, and so on indefinitely as long as the engine is hotter than the water.

Questions.

1. What does a Radiator based on the water circulating system do?
2. What causes water to heat up?
3. Where does water, in this system, get heated up?
4. Why does it get heated up?
5. Why is *water* made to circulate around the engine?
6. What business has water near the engine?

7. Does the engine require water?
8. If so, what is its object?
9. Is it necessary that the engine be surrounded by water? Why?
10. Is every engine furnishing power to vehicles supplied with water?
11. Is there not a certain percentage of automobiles without this water cooling system?
12. In what condition is water when it enters the engine jackets?
13. In what condition is it when it enters the radiator?
14. Why does it have to enter the radiator?
15. What does the radiator do to water?
16. What is absorbed by the radiator from the water entering it?
17. How is the water when leaving the radiator?
18. Is it the same water that came to it from the engine jacket?
19. If it is the same water, how is it changed?

20. What does the radiator do to the water entering it?

21. What is left in the radiator when water passes through it?

22. What is done with that which is left in the radiator after the water has passed through it?

23. Does it remain in the radiator?

24. If not, where does it go?

25. What does the radiator do to water passing through it?

26. What does the water do to the engine around which it flows?

27. What is the detailed journey of the water contained in a radiator?

28. Why is a radiator called a radiator?

29. From what does it derive the name?

30. What does the name indicate?

31. What other words may be used to designate what a radiator does?

32. What *indirect* way is chosen

to make the radiator do what it does?

33. What does it do?

34. What is the *process* by which the radiator does what it is intended to do?

Write down **YOUR** answers, and when through answering each question in the best way you can, read them over **BACKWARD**, commencing with No. 34 and going back to the first answer you wrote.

You undoubtedly will find it interesting to note **INCORRECT** answers, if any, which you have made.

Correct them! Rewrite your answers so that there is **NO** contradiction in any of them! Learn them so you know them!

Review.

Do not commence the next lesson, unless you can answer satisfactorily the following five questions. Answers to these five questions should be written down on a piece of paper and mailed to us for correction. Corrected answers may be kept in a handbook for future reference.

Questions.

- (a) What is a radiator?
- (b) Why is a radiator employed in connection with internal combustion engines?
- (c) What service does the radiator perform?
- (d) How does the radiator perform its service?
- (e) What is the course of the water contained in the radiator?

(Another Lesson next week.)

Detroit Sheet Metal Contractors Hold Meeting.

The Detroit sheet metal contractors held their regular meeting Monday evening, December 11th, with R. C. Mahone presiding, the occasion serving to introduce the organization's new secretary, D. M. Marshall.

A "Question Box" was the main feature. Among the general subjects discussed was that of "book-keeping." Frank Ederle, Adam Martin, Harry F. Rhodes of Grand Rapids and A. S. Albright of Flint were guests.

L. D. Hold Buys Sheet Metal Shop in Oelwein, Iowa.

L. D. Hold has purchased the sheet metal contracting business of C. M. Smith at Oelwein, Iowa.

C. G. Shewel Buys Sheet Metal Shop in Storm Lake, Iowa.

C. G. Shewel has bought the sheet metal shop and business of R. J. Peterson at Storm Lake, Iowa.

Alabama Sheet Metal Contractor Passes On.

E. J. Wakeford, sheet metal and plumbing contractor, Foley, Alabama, and for many years a valued subscriber of *AMERICAN ARTISAN*, passed away recently at his home. The business is being carried on at present by E. S. Randall, administrator of his estate.

Many merchants keep samples of cheap stoves just for comparison with the better class of goods. Where there is much catalog competition, this is a good plan, because it enables a dealer to show a customer the difference between a stove made for mail order business and one made by a reliable manufacturer to sell at a fair price.

Notes and Queries

"Burt" Ventilators.

From E. A. Sharer, Verona, Wisconsin.

Can you please tell me who makes the "Burt" Ventilators?

Ans.—The Burt Manufacturing Company, 40 Main Street, Akron, Ohio.

Fireplace Dampers and Fixtures.

From Samuel P. Hedges, Rochester, Indiana.

Please give me the name of a manufacturer in Chicago that makes fireplace dampers and fixtures.

Ans.—William H. Hoops and Company, 529-531 South Wabash Avenue, Chicago, Illinois.

Address of Brantford Cutlery Co.

From Young Hardware Company, Bellevue, Iowa.

Can you inform us where the Brantford Cutlery Company is located.

Ans.—This is Butler Brothers, Randolph Street Bridge, Chicago, Illinois, who put out their cutlery under the name of the Brantford Cutlery Company.

Address of Mason and Davis Range Company.

From Stove Dealers Supply Company, 310 Chestnut Street, Milwaukee, Wisconsin.

Will you kindly tell us where the Mason and Davis Range Company is located, as we desire to secure repairs for one of their ranges.

Ans.—They are out of business, but you can secure repairs from Peter Magala, 1411 West Erie Street, Chicago, Illinois.

Transfer Paper.

From Benedict and Thys, Clinton, Wisconsin.

Please advise us who manufactures transfer paper.

Ans.—Emil Majert Company, 9 East 37th Street, New York City, and The Meyercord Company, Chamber of Commerce Building, Chicago, Illinois.

Address of J. Retterer Stove Company.
From William A. Long, Franklin Tin Shop, P. O. Plymouth, R. 5, Franklin, Wisconsin.

I should like to know where J. Retterer Stove Company is located, as I am in the market for repairs for the Burlington Heater No. 17.

Ans.—This concern has been out of business for about five years, but repairs for the Burlington Heater No. 17 can be bought from the Northwestern Stove Repair Company, 654 West Roosevelt Road, Chicago, Illinois.

"Sun" Hinge Burner.

From Charles Long, 123 South 9th Street, Lincoln, Nebraska.

Please advise me who makes the "Sun" hinge burners, used in incubators.

Ans.—E. Miller and Company, Meriden, Connecticut.

Block Tin in Sheets.

From Victor L. Morgan, Box 235, Manilla, Iowa.

Where can I buy block tin in sheets?

Ans.—John J. Crooke and Company, 1649 Warren Avenue, Chicago, Illinois.

"K. and B. H. Company."

From James Wallington, Saranac, Michigan.

Please give me the name and address through your paper of K. and B. H. Company, manufacturers of the "Cut Sure" diagonal pliers.

Ans.—This is the Kruse and Bahlman Hardware Company, 410 Pioneer Street, Cincinnati, Ohio.

Summary of Tests by British Heating Engineers on Efficiency of Ranges Contains Much Useful Information.

Manufacturers as Well as Retailers of Kitchen Ranges Will Find Helpful Suggestions by Careful Study of This Summary.

(This is the third and last of a series of articles on this subject.)

Committee's Conclusions.

The Committee have arrived at the following conclusions as to the principles which should guide the construction of cooking ranges to secure fuel economy, so far as these may be applied consistently with convenience and other considerations.

(A) *Resulting From Physical Tests.*—(1) Air should only have access to the fire through the grate bars; the fire should, therefore, be as completely enclosed as possible. (a) The furnace should be lined with non-conducting material except at any part where heat is required to be directly transmitted. (b) The fire should have a minimum thickness of about 5 inches.

(2) In-leakage of air into the flues and oven should be prevented, hence (a) loose rings in the hot plate and cleaning doors should be reduced to a minimum; (b) the cleaning doors, rings, and other parts of the range where leakage of air could take place, should fit with as air-tight joints as practically possible; (c) the fit of the oven door should be as good as practicable.

(3) Loss of heat through surface radiation should be prevented whenever such surface is not required for cooking or heating purposes, hence (a) The oven door and iron plates on top and front of the stove should be lagged with non-conducting material; (b) the flues adjacent to the faces of the grate, other than the hot plate, should likewise be lined with non-conducting material; (c) only such area of hot plate as is required for cooking purposes should be exposed to direct heat.

(4) For economy the hot gases should impinge on the bottom of the oven as soon as possible after leaving the fire, hence (a) the fire is better placed relatively low to the

oven; (b) flues should be arranged so that the gases first pass under the oven and subsequently over it; top heat, however, is preferable for certain kinds of cookery; this may be provided for though it should be borne in mind that top heat is relatively expensive in fuel.

(5) The fire should be immediately under, and able to radiate directly up to, that part of the hot plate where the strongest cookery or boiling effect is required.

(6) Ranges should be designed to burn coke efficiently as an alternative to coal.

(7) Appliances which combine several functions use considerably more fuel than would be required if each function were performed by a separate appliance.

(8) The rising grate effects economy mainly by excluding the air from the top of the fire when the grate is raised.

(B) *Conclusions derived from Practical Tests.*—(1) High rates of oven transmission are rarely necessary; they make the oven too hot for ordinary cooking.

(2) The practice of using the interior of the oven as a hot plate and conducting therein many of the operations commonly done on the hot plate, is sound and economical.

(3) Transmission of heat is facilitated by placing the vessel on the bottom of the oven; there is a danger, however, of the food burning.

(4) An advantage of the movable grate is that it allows cooking to be conducted economically with the grate on the top notch, and, by lowering the grate, enables a toasting effect to be obtained, but at a great cost of fuel.

(5) Uniform oven temperature for a considerable period is desirable for certain operations, but a sharp rise in temperature is necessary for others, and a difference be-

tween top and bottom heat is very desirable.

(6) Small ovens are generally much more economical in practice than large ovens, but skilful management is necessary to cook a large meal on a small range.

(7) The height of the oven should be such that it is possible to examine the contents of dishes without removing them. The fireplace and the hot plate should be at a convenient height. An inner door to an oven having transparent panels is a great advantage.

(8) A hot plate should provide a wide range of temperatures and only sufficient space to accommodate all the vessels ordinarily required during the preparation of a dinner.

(9) Contact of the cold surface of a boiler with incandescent fuel is undesirable.

Southern Stove Manufacturers Will Meet December 18-19.

The annual meeting of the Southern Stove Manufacturers' Association will be held December 18th and 19th at the Vendome Hotel, Evansville, Indiana.

As usual with the annual meetings of this splendid organization, there will be plenty of things stirring during the business sessions, and the Evansville stove manufacturers who are hosts will see to it that the rest of the time will be fully as enjoyable as in past years.

One face which will be missed at the banquet table the evening of December 18th will be that of the late Mayor Bosse of Evansville, a man of splendid executive ability, wonderful facility to place himself in the other fellow's shoes and, therefore, with a keen sympathy for the man who had a streak of bad luck. Mr. Bosse, who died last April, was for years one of the guests of honor at the annual ban-

quets and always had something worth while to say to the stove men.

Merchant Puts Message of Optimism in Ad.

There is nothing like an atmosphere of prosperity and optimism to give the prospective customer the psychological urge to buy. An Eastern merchant understands this feeling and capitalized it in a large newspaper ad headed "Be of Good Cheer, Everybody." Why we expect this year's holiday business to be the greatest in the history of our house:

1st. Because we believe this coun-

try has turned towards prosperity.

2d. Crops are enormous, unemployment has been greatly relieved—mills and manufacturers are operating on a vast scale.

3d. The spirit of conciliation is in the air between labor and capital—between nations, and groups of all kinds.

4th. Safe and Sane Spending is the expression of a finer sense of values and merchandise. Both conservative and lavish purchasers are quick to appreciate a store which specializes in close to cost prices for its great assortment, giving in this way the values which the public wants.

ber 1 we had sold over 100 pieces; that is, coal, gas and combination ranges. The remaining months of the year are our best months by far, and we expect to make a much better showing for the year.

Our policy is to advertise regularly in the daily newspapers, which, of course, is necessary.

In April we had a week's demonstration of gas ranges with excellent results. We are still selling stoves as a result of this demonstration.

On our floor we display a complete line of coal, gas and combination ranges. The average buyer, we think, is impressed if a full line is displayed. We keep the stoves clean and trim at all times. Polished tops are "polished."

One or two gas ranges on the floor are always connected for demonstration purposes, and we always have at least one "Quick Meal" range attractively displayed in our windows.

On glass shelves above the gas ranges (towards the front of the store) we have a big display of "Lorain" oven canned fruits and vegetables. No woman entering the store fails to be interested in this display, which gives us an oppor-

Continuous Demonstration and "Plugging Away" Sells 100 Ranges in First Nine Months of Year.

This Firm Knows and Believes in Its Line for Everyone in Store Has One in Home.

A SHORT course in salesmanship and merchandising of stoves and ranges is offered in the account of the methods used by The Paul & Ortmeyer Company of Evansville, Indiana. In response to a request from AMERICAN ARTISAN AND HARDWARE RECORD, this enterprising firm of merchants have supplied the account, and they modestly add that while pleased with their business they do not feel in a position to tell others "how to do it."

The Paul & Ortmeyer Company are in the business to sell stoves and ranges and furnaces and do sheet metal work and auto radiator and fender repairing. Just turn to the accompanying photograph and observe how this firm tells the world what their business is. Not only the large electric signs giving the firm name and featuring their line of "Quick Meal" gas ranges, but the very modern store front is also utilized to feature the ranges and "Wise" furnaces. But let the Paul & Ortmeyer Company tell it:

There is nothing about our methods that is particularly brilliant or startling; it is rather a matter of "plugging away." However if any

of our plans seem good enough so that they may help other dealers sell stoves, we are glad to submit them.

We have only sold the "Quick Meal" line since January 1 of this year, but are featuring the line almost exclusively. Up to Septem-

To Save Money—Can Vegetables Now!

—no heat or drudgery if you do it the easy Quick Meal way

See Our Line of

QUICK MEAL GAS RANGES

with

LORAIN

OVEN HEAT REGULATOR

The Lorain Oven Heat Regulator automatically keeps your gas oven at any one of 44 different temperatures. When you light the oven burner, simply set the red wheel at the heat you want. The oven will stay at that uniform heat regardless of changes in gas pressure.

By preventing inaccurate or varying oven heat, Lorain makes every baking successful. No more "unlucky" days. Lorain enables you to cook an entire meal at one time in the oven, without "pot-watching". It makes home canning easier and better. Own a Lorain-equipped Quick Meal Gas Range now!



Quick Meal Gas Ranges with Lorain Oven Heat Regulators as low as \$70.00

To can PEACHES

The easy Lorain way

Scald 1 or 2 minutes to loosen skins. Dip quickly in cold water, skin and halve, removing stones if you wish. Fill jar with boiling water or syrup. Syrup should be 1 part sugar to 4 parts water. Put scalded rubbers in place, adjust lids loosely. Put jars in oven, set Lorain wheel at 120 deg. for one hour. Remove jars when clock rings.

THE PAUL & ORTMAYER CO.

21 Main

Cash or Credit

Advertising in Daily Newspaper Is Necessary, Says The Paul and Ortmeyer Company. Reproduction of Ad in Evansville, Indiana, Courier.

tunity of explaining the uses of the "Lorain" and the "Quick Meal" oven.

We have a large "Quick Meal" electric sign on the front of our building, which we consider a splendid investment.

Soon after a "Quick Meal" range is delivered we call on the pur-

chaser, see that the oven heats to proper temperature and again instruct them as to the many uses of the "Lorain" equipped "Quick Meal" oven. That we take an interest in the stoves always pleases the housewife and gets us many prospects, to say nothing of satisfied customers.

We do not make a house-to-house canvass, but we do go after prospects!

The Quick Meal Stove Company gives us most liberal assistance in the way of advertising matter, and the generous national advertising of the "Lorain Oven Heat regulator" is a wonderful help. Every progressive housekeeper knows some-

thing about the "Lorain" and wants to know more. Also "Quick Meal" goods are "different" from the average; in a class to themselves, as it were. When showing "Quick Meal" goods the salesman has so many distinctive features to show; so many exclusive points of construction, fin-

ish and use to dwell on that he can fairly make the prospect "hungry" for that particular piece of goods.

Finally, everyone in our store who sells "Quick Meal" goods has a "Quick Meal" gas range in his or her home. We all know from actual experience what the stove will do and how to get the desired results. Consequently we are able to tell the customer what can be done with the stove, how to do it and why. In fact, a friend of ours—a traveling salesman—tells us that we are "Quick Meal" nuts, which we consider a compliment.

Heaven never helps the man who is a victim of that tired feeling.

First Gas Stove Used in Philadelphia in 1876.

The Centennial Exhibition at Philadelphia in 1876 and the World's Fair at Chicago in 1893 marked two important dates in the development of the use of manufactured gas in the United States.

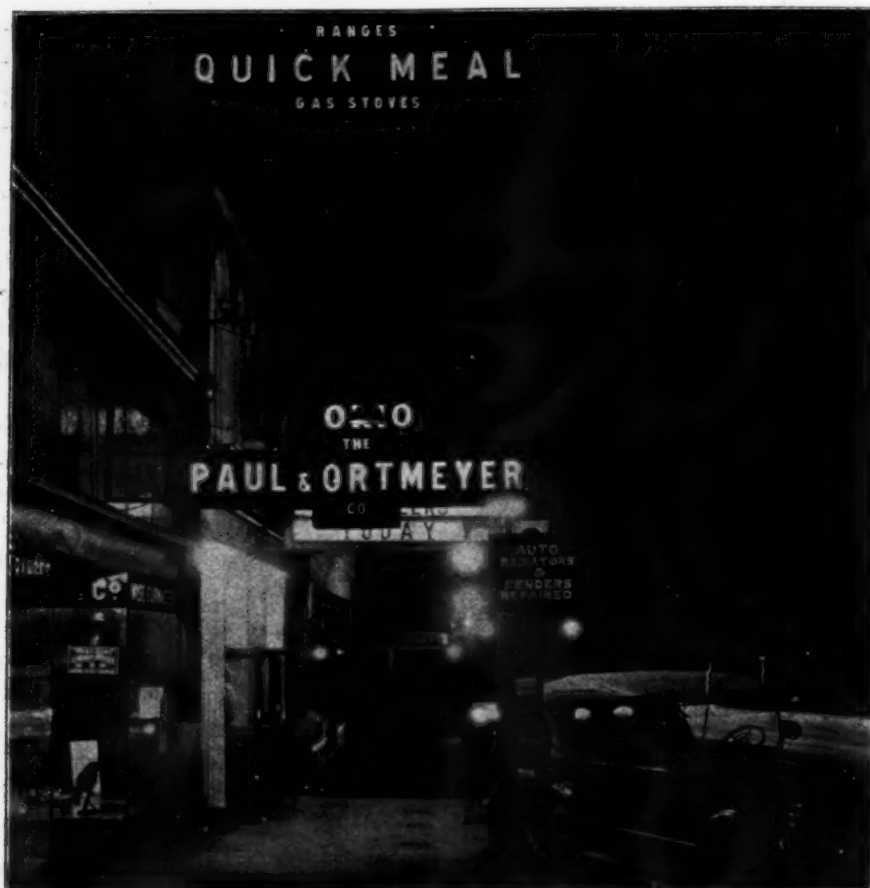
The first gas stove on record was used at the Centennial Exhibition by a baking powder company to demonstrate cake baking. The first elaborate display of gas stoves was made at the World's Fair in Chicago and marked the beginning of their popular and general use.

At the time the baking powder company introduced the use of gas stoves, coal, wood and gasoline stoves were in general use. Gas stoves really did not become popular or have much of a sale until after the exhibition by manufacturers at the Chicago fair. About 1895 the use of gas stoves began to spread and their use has increased steadily ever since. The first all-steel gas range was put on the market in 1901. It was not until 1910 that the use of white porcelain enamel which has made the modern gas stove a thing of cleanliness and beauty, began.

Today it is estimated that there are 7,040,000 gas cooking appliances, such as ranges and gas plates in use, and gas cooks the meals for approximately 46,700,000 persons in the United States every day, according to statistics compiled by the American Gas Association.

Store Costs Over Twice Pre-War Figure.

Store costs at the present time are now 2½ times above that of 1901. Store costs is a good servant, but a poor master; they eat into the profits. Expenses have increased 2½ times since the figures given out for the conduct of department stores in 1901. During the same time the gross gained has shrunk while from this gross gain must be taken numerous incidentals, thereby lowering the actual net profit to rather small figures nowadays.



Electric Sign Advertising Which The Paul and Ortmeier Company of Evansville, Indiana, Call "a Splendid Investment."

Events and Progress of the Hardware Trade.

What the Retailers, Jobbers and Manufacturers Are Doing. Latest Selling Methods and Experiences of Successful Men.

Germans Said to Be Copying U. S. Hardware.

About 2,000 tons of hardware are used annually in the Island of Sicily. The greater portion of this amount is imported direct from Germany. United States or Continental Italy.

American manufactures sold there consist chiefly of safety locks, hinges, bolts, files, fittings, safety razors, sandpaper and abrasive cloth. Germany, according to a re-

port to the Department of Commerce from Consul E. I. Nathan, Palermo, is making a serious effort to capture the Sicilian trade, and their articles, on account of the high opinion in which American hardware is held here, are now being made along American lines and in such articles like locks, hinges, and bolts, they are considered by the local trade to be excellent imitations.

of patience because you can never accurately estimate what advertising does for you. All you know is, that if you do not advertise constantly, year after year, you might as well not be in business.

Get knowledge. Learn more about your town. You need not pay a man \$300 or \$400 to come in and make a survey and give you a cut and dried form that will show just how much you can secure from your activities in your town. You can make such a survey yourself, with the aid of your own Civic and Commerce Association. You can see how you score up alongside of the other towns in your section of the world. You can go ahead and make a survey of your own prospects for business.

Apply These Dividend Hints to Get the Most Out of Your Retail Advertising.

Harmonize Your Stock Display, Your Window Designs, and Your Printer's Ink, Says Merchandising Expert

HOW to make the most out of retail advertising is a problem that confronts every merchant. The feeling that one is doing too little, or too much, is ineffective and scattering, is ever present. The problem is never the same for any two merchants. And there are no series of hard and fast rules to lay down.

But the intelligent and thoughtful merchant will find many happy and inspirational leads from the suggestions of Edward Barr of the St. Paul Association, in a special message on realizing goodly dividends upon the dollars invested in business creating publicity. For the last two years Mr. Barr has traveled extensively in Wisconsin, the Dakotas and Northern Iowa, talking with merchants and exchanging ideas. His special message to merchants of this territory, as published in a Northwestern publication, is adaptable everywhere goods are sold. We quote in part:

You hear a lot of talk about connecting up with advertising. How many of you can define what people mean by that? They are talking a foreign language to you and me. It is a general proposition that most of

us cannot get at and analyze, but I think I can explain my view so that you will understand it as I do.

Synchronize your advertising, harmonize it, get it to working together so that you have team-work, that is, among the manufacturer's advertising and your own windows and counter displays and stuffers that go out through the mail to your customers, and the copy that goes in your local newspaper, so that there is perfect harmony and they are pulling together at the same time.

That ought to be simple. It is not only simple but it is good business. It is such good business that the men who do it are succeeding, and those who do not do it are generally second or third or fourth rate in their town. You can see it all up and down this state.

In order to advertise successfully you need two things. One is knowledge—knowledge of your market, of your goods, of yourself, of your store and its possibilities, of the people's efforts, and knowledge of the folks you are dealing with. You must have knowledge of all these things and, secondly, you need a pile

You need to have some knowledge of what advertising really is and what it is not. We have a lot of people who believe that advertising is putting the store name on 10,000 pencils and peddling them out around the country free. I was in a small factory the other day talking with the proprietor about advertising. He said to me, "I have spent all my money for advertising." I said, "Where is it? I never heard of you until today." He said, "I spent it for advertising and it is all in here. It hasn't been used yet." And he took me into a back room and there he had \$30,000 worth of trinkets that he had bought from novelty concerns—not a bit of it that could be sold—all printed with his name on—he couldn't sell a nickel's worth of it. I said, "Why don't you send them out?" And he said, "I haven't the money." He had tied up his appropriation in stuff he couldn't send out in his present financial condition. It wouldn't pay its board.

There are three big things, and not much more in retail advertising—your windows (or your store front), how your stocks are ar-

anged inside your store (your counter displays), and printer's ink. There isn't anything else that amounts to a tinker's dam in advertising. There is no other advertising of a chargeable kind that does you good enough to count.

There is also a kind of non-chargeable advertising which works against your interests. For instance, I know a man in the general store business in southern Minnesota who charged a farmer \$1.25 for a common garden rake that cost him 48c. The same rake was on sale down the street for 85c, as I remember. This merchant wanted \$1.25 for it. The farmer said, "I don't want to pay that much, when I can buy it down the street for 85 cents—from a man I have never done business with." The merchant said, "That is the price—you can take it or leave it." The farmer said, "I will leave it," and out he went and with him went all the chance of ever selling that man a bill of staple hardware or a piece of goods or a suit of clothes, or a washing machine or a cultivator or a single piece of farm machinery in the future. He was done right then and there. There is negative advertising, and there is plenty of it still being done up and down the country, and we know it.

I have heard many merchants say that the retail business has been indicted by the public. That is perfectly true, but seems to me that we can overcome that by convincing the public that we are right, that we are honest, that we are on the level and that we do not charge too much.

Tell them occasionally what the profit actually is on goods; it will surprise them, especially when you show that the profit must be figured as so much of the selling price, instead of so much over the cost price. I have been very much surprised this year by the lack of knowledge among retail merchants of how profits should be figured. In a number of group meetings we have discussed this, and I was surprised to learn how many men have believed that if the cost price was \$2 and selling price \$3, they were making 50 per cent. You would be sur-

prised to know how many retail merchants are figuring their business that way. Then they wonder why profits elude them at reckoning time.

Just one other thought for you. When you make your advertising appropriation for the year, whether it is 2 per cent or 3 per cent, or if necessary, 10 per cent, start high, and you may find that the volume of sales will bring down your advertising ratio. Then you are aiming to get somewhere early in the year, you are going to earn a definite number of sales in a certain line, or you are going to earn a definite amount of good will; you are going to make a certain number of friends and get them in your store.

Window Display Contest Stimulates Better Ideas.

Every window trim ought to be good and every good window trim ought to be photographed.

This is the main idea underlying the annual window display contest conducted by AMERICAN ARTISAN AND HARDWARE RECORD, which is now on and will continue to April 1, 1923.

Probably your Christmas window is a winner. Well, photograph it and send it in, according to the terms of the contest. But take this tip. About a month later take out the photograph and study the weak points of the design. Then start in and create a new design that will make the special Christmas window a back number.

Remember it costs nothing to enter the contest, and you may send in as many designs as you wish. Only observe these rules:

The window display must be photographed, and the display may be made up of goods from any of the following lines: General hardware, machinists' supplies, builders' hardware, automobile supplies, sporting goods, fishing tackle, house furnishings and paints, cutlery, dairy supplies, stoves, ranges, warm air heaters, sheet metal or kindred lines.

The photograph, together with description of how the window dis-

play was arranged and the materials used, may be sent by mail or express, charges prepaid, and must reach this office *not later than April 1, 1923.*

Each photograph and description must be signed by a fictitious name or device and the same name or device must be placed within a sealed envelope containing the real name and address of the contestant, this sealed envelope to be enclosed with the photograph.

AMERICAN ARTISAN AND HARDWARE RECORD reserves the right to publish all photographs and descriptions submitted in the contest.

Four prizes, totaling \$100, are to be awarded for the entries adjudged the most meritorious. These are; first prize, \$50; second prize, \$25; third prize, \$15 and fourth prize, \$10.

Can Your Salesmen Answer These Questions?

Where the goods are, so that they may save time for themselves and for their customers?

Which lines sell best and which show a tendency toward slowness?

How long each article has been in stock, so that they may in the interest of the store, sell those things which arrived first?

Which lines you wish pushed, either because of profit range or for other reasons?

The stock as a whole, especially as to price, size and shape?

Why each article was made and what it is used for?

Where it was made and if it is up-to-date in style?

How it was made and particularly whether there are any processes of manufacture that make it particularly desirable?

What it is made for? Do the raw materials used especially recommend it and why?

What will it do—beautify, protect, be durable, comfortable or convenient?

A pessimist always looks as though he were afraid it would cost him a few cents to look pleasant.

Suggestions and Plans for Window Displays.

Instructive Examples from Exhibits in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition.

Live Santa Claus at Work.

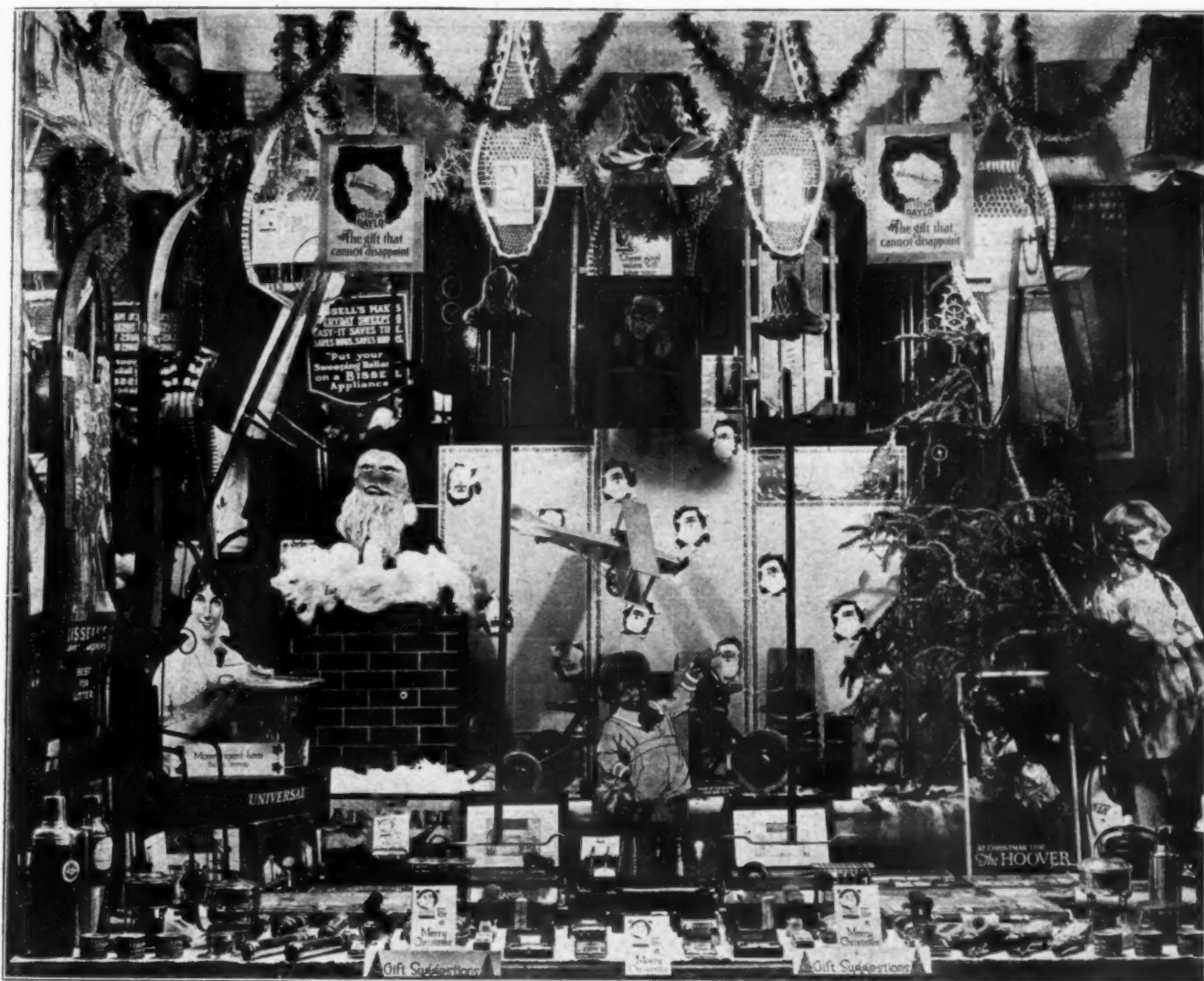
When the Sumner Company, Ltd., of Moncton, New Brunswick, Canada, decided to "put on" a Christmas window, they carefully considered one point which is so often overlooked and which just as

- Claus and everything in life size.

The result is that the window gives a fine display of the jolly old saint, but nothing else.

Which is to say that the display is a hundred per cent success as a truthful reproduction of Santa

be noted that these articles are relegated to the background—that is, they are made secondary to the main purpose of the window, which is to display as artistically and in as great numbers as possible the "gifts of utility" as shown.



Special Christmas Window Display Designed by Alex. Baillie for the Sumner Company, Ltd., Moncton, New Brunswick, Canada.

often operates to hold down the Christmas window from earning its full value.

That point is this: because it is a Christmas window, the designer imagines there must be a big roly poly Santa Claus, a life-size chimney, a gigantic pack—in short, everything that goes with Santa

Claus, but there is no room left to display goods. And that's what the window is for—to display and to sell goods.

Here we have a window where there is a small Christmas tree, a Christmas chimney and an artificial Santa poking his head up through the snow-covered flue. But it is to

This arrangement offered another unique possibility which was taken advantage of. A real live Santa Claus was employed to attract interest on the streets, and like the Pied Piper of Hamelin, he used his ebullient presence to attract a throng of customers to the store, and then slipping to the window, he unob-

trusively changed places with the artificial Santa Claus, and proceeded to point out to the crowds outside the attractive articles in the window.

The design was by Alex Baillie for the Sumner Company. Mr. Baillie's description was as follows:

"This is a Christmas window containing a variety of articles suitable for holiday gifts. The Christmas tree, trimmed in one corner, had miniature electric lights which were lighted at night. The artificial Santa Claus in the chimney was replaced on two or three afternoons by a live one who walked down the main street attracting a crowd to the store and afterwards stood in the window behind the chimney pointing out the different articles."

Coming Conventions

Western Implement and Hardware Association, Kansas City, Missouri, January 16, 17, 18 and 19, 1923. Exhibition in Convention Hall. H. J. Hodge, Secretary, Abilene, Kansas.

Texas Hardware and Implement Association, Dallas, Texas, January 23, 24 and 25, 1923. A. M. Cox, Secretary, 822 Dallas County Bank Building, Dallas, Texas.

Mountain States Hardware and Implement Association, Denver, Colorado, January 23, 24 and 25, 1923. W. W. McCallister, Secretary-Treasurer, Boulder, Colorado.

Kentucky Hardware and Implement Association and Exhibition, Jefferson County Armory, Louisville, Kentucky, January 23, 24, 25 and 26, 1923. J. M. Stone, Secretary, Sturgis, Kentucky.

West Virginia Hardware Association Convention and Exhibition, Huntington, West Virginia, January 30 and 31, and February 1, 1923. James B. Carson, Secretary, 1001 Schwind Building, Dayton, Ohio.

South Dakota Retail Hardware Association, Sioux Falls, South Dakota, January 16, 17, 18 and 19, 1923. H. O. Roberts, Secretary, 1120 Metropolitan Life Building, Minneapolis, Minnesota.

Idaho Retail Hardware and Implement Dealers' Association, Boise, Idaho, January 31, February 1 and 2, 1923. E. E. Lucas, Secretary, Hutton Building, Spokane, Washington.

Indiana Retail Hardware Association Convention and Exhibition, Indianapolis, Indiana, January 30 and February 1 and 2, 1923. G. F. Sheely, Secretary, Argos, Indiana.

Oklahoma Hardware and Implement Association, The Auditorium, Oklahoma City, Oklahoma, January 31, February 1, 1923. W. A. Clark, Secretary-Treasurer, 209½ West Main Street, Oklahoma City, Oklahoma.

Nebraska Retail Hardware Association, Convention and Exhibition, February 6 to 9, 1923, Omaha, George H. Dietz, Secretary-Treasurer, 414 Little Building, Lincoln, Nebraska.

Michigan Retail Hardware Convention, Windsor Hotel, Jacksonville, Flor-

ruary 6, 7, 8, 9, 1923. Karl S. Judson, Exhibit Manager, 248 Morris Avenue, Grand Rapids. A. J. Scott, Secretary, Marine City, Michigan.

Virginia Retail Hardware Association, Norfolk, Virginia, February 7, 8 and 9, 1923. Thomas B. Howell, Secretary, Richmond, Virginia.

Wisconsin Retail Hardware Association, Milwaukee Auditorium, Milwaukee, Wisconsin, February 7, 8 and 9, 1923. P. J. Jacobs, Secretary, Stevens Point, Wisconsin. George W. Kornley, Manager of Exhibits, 1476 Green Bay Avenue, Milwaukee, Wisconsin.

Pennsylvania and Atlantic Seaboard Hardware Association Convention and Exhibition, Philadelphia Commercial Museum, Philadelphia, Pennsylvania, February 12, 13, 14, 15 and 16, 1923. Sharon E. Jones, Secretary, 1314 Fulton Building, Pittsburgh, Pennsylvania.

Ohio Hardware Association Convention and Exhibition, Cleveland, Ohio, February 13, 14, 15 and 16, 1923. Exhibition in the new Municipal Hall. James B. Carson, Secretary, 1001 Schwind Building, Dayton, Ohio.

Illinois Retail Hardware Association Convention and Exhibition, Hotel Sherman, Chicago, Illinois, February 13, 14 and 15, 1923. L. D. Nish, Secretary-Treasurer, Elgin, Illinois.

Iowa Retail Hardware Association Convention and Exhibition, Des Moines, Iowa, February 13, 14, 15 and 16, 1923. A. R. Sale, Secretary, Mason City, Iowa.

North Dakota Retail Hardware Association, Grand Forks, North Dakota, February 14, 15 and 16, 1923. C. N. Barnes, Secretary, Grand Forks, North Dakota.

Missouri Retail Hardware Association Convention and Exhibition, Planters Hotel, St. Louis, Missouri, February 20, 21 and 22, 1923. F. X. Becherer, Secretary, 5106 North Broadway, St. Louis, Missouri.

Minnesota Retail Hardware Association, Duluth, Minnesota, February 20, 21, 22 and 23, 1923. H. O. Roberts, Secretary, 1120 Metropolitan Life Building, Minneapolis, Minnesota.

New England Hardware Dealers' Association Convention and Exhibition, Mechanics' Building, Boston, Massachusetts, February 21, 22 and 23, 1923. George A. Fiel, Secretary, 10 High Street, Boston, Massachusetts.

New York State Retail Hardware Association Convention and Exposition, Rochester, New York, February 20, 21, 22 and 23, 1923. Headquarters, Powers Hotel. Sessions and Exposition at Exposition Park. John B. Foley, Secretary, City Bank Building, Syracuse, New York.

Indiana Sheet Metal Contractors' Association, Terre Haute, Indiana, February 21 and 22, 1923. Leslie Beach, Secretary, Richmond, Indiana.

Michigan Sheet Metal and Roofing Contractors' Association, Bay City, February 26, 27, 28 and March 1, 1923. Frank E. Ederle, Secretary, 1121 Franklin Street, S. E., Grand Rapids, Michigan.

Iowa Sheet Metal Contractors' Association, Sioux City, Iowa, March 14, 15, 1923. R. E. Pauley, Secretary, Mason City, Iowa.

American Hardware Manufacturers' Association, Spring Convention, Windsor Hotel, Jacksonville, Florida, April 24, 25, 26 and 27, 1923. Frederick D. Mitchell, Secretary - Treasurer, 1819 Broadway, New York City.

Southern Hardware Jobbers' Association and Exhibition, Grand Rapids, Feb-

ida, April 24, 25, 26 and 27, 1922. John Donnan, Secretary-Treasurer, Richmond, Virginia.

Old Guard Southern Hardware Salesmen's Association, Windsor Hotel, Jacksonville, Florida, April 25, 1923. R. P. Boyd, Secretary-Treasurer, R. F. D. 4, Knoxville, Tennessee.

Hardware Association of the Carolinas, Columbia, South Carolina, May 8, 9, 10 and 11, 1923. T. W. Dixon, Secretary-Treasurer, Charlotte, North Carolina.

Arkansas Retail Hardware Association, May, 1923. (Place to be announced later.) L. P. Biggs, Secretary, 815-816 Southern Trust Building, Little Rock, Arkansas.

National Retail Hardware Association, Richmond, Virginia, June, 1923. Herbert P. Sheets, Secretary-Treasurer, Argos, Indiana.

Southeastern Retail Hardware and Implement Association, covering Tennessee, Alabama, Georgia and Florida. (Date and place to be announced later.) Walter Harlan, Secretary-Treasurer, 701 Grand Theater Building, Atlanta, Georgia.

Retail Hardware Doings

Arkansas.

Ritchie Brothers will open a hardware store at Charleston.

The hardware firm of Neely & Smith at Searcy have dissolved partnership. Hubert Smith having bought the interest of R. A. Neely.

Twin City Hardware & Furniture Company of Van Buren has sold out to Joe Bennett.

Illinois.

Elmore & Blue Company, hardware, has been incorporated at Ava with a capital of \$20,000. Incorporators are: George Blue, William R. Elmore, Pearl A. Wilson, Oda F. Elmore.

W. H. Madden of White Heath has bought the building owned by J. M. Branch at that place and will open a hardware store at that place about January 1st.

Iowa.

Chas. DeGrot has purchased The Maurice Hardware stock at Maurice.

Gus Ehlers of Lyons has purchased the building at 104 Second street from H. C. Hansen. He has opened a hardware store at that place.

Peter Koster will open a hardware store at Doon.

Indiana.

Earl Huffman will open a hardware store at Newcastle.

Michigan.

At Ortonville, M. L. DeLano has taken over the hardware stock of Scott Kendrick.

Minnesota.

The Hawley Hardware store and the Webb Winger Hardware store of Sandstone have been destroyed by fire.

Nebraska.

Sherman Brothers of Allen have purchased the Travers Hardware & Furniture store at that place.

South Dakota.

Will Carroll has purchased the S. O. Lewis Hardware store at Dallas.

Wisconsin.

B. F. Wolk has purchased one-half interest in the Minocqua Hardware Company at Minocqua.

The Masik Hardware store has opened at 1313 Yout street, Racine.

Study and Interpretation of Advertisements.

You Can Make Your Advertisements More Gainful by Avoiding the Faults and Profiting by the Good Qualities of Others.

The most commendable feature of the ad prepared by the Pierce Hardware store of Edenburg, Indiana, and published in the local

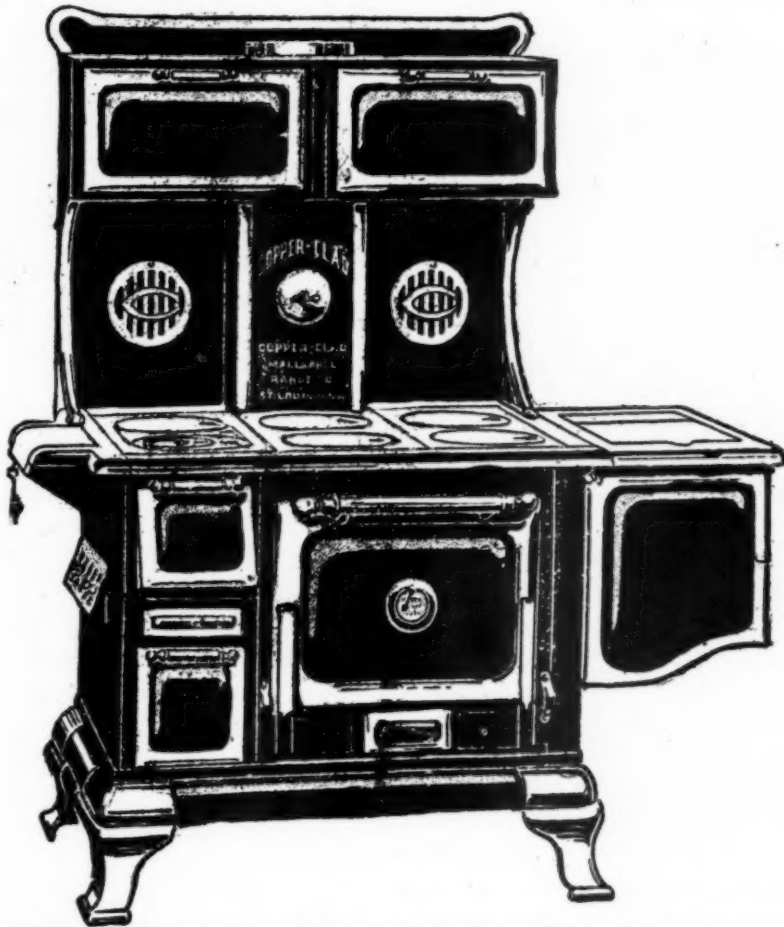
page, gives 100 per cent illustration value, showing plainly the position of the ovens, the hot water heater, the fire boxes, the door drops, etc.

which only personal inspection can satisfy.

The reading matter below the cut betrays two or three typographical errors, which careful proofreading might have eliminated.

* * *

"Our Big September Sale" is the catch-line for an advertisement by the United Supply Co. of Brunswick, Georgia, which shows much



**When You Buy Your Range Buy
A Copper Clad
Copper Lined, Cant Rust Out, All Malle-
able, One Piece Base and Double
Pannel Doors.**

Pierce Hardware.

press, is the large and striking cut of the article to be merchandised: to wit, a Copper Clad Malleable Range.

This bold and clear-lined cut, as shown by the reproduction on this

The housewife who likes this "first impression," and is at all in the market for a range, is likely to be prompted to visit the store, and there it is up to the salesman to point out the particular selling points

Our Big September Sale

Means much to you if you act quickly for there are only a few days left to enjoy big savings on goods bought from our big stock.

Its a real nice fact when we say that all our profits are given away during this sale and all we ask is a chance to prove it.

Think of buying seasonable goods at wholesale price. An unusual opportunity you can't afford to miss.

Heaters	Gas Stoves	Ranges
Enamel Wear	Paints	Guns
Ammunition	Fishing Tackle	
Boat Fittings	Boat Material	

United Supply Co.

Hardware Headquarters

more effectively in the original size of three columns by 16 inches than in the reduction. It also calls attention, however, to the fact that it was not through lack of space that the advertisers neglected to clinch their strong and well put selling talk. A store which is giving away its profits undoubtedly could announce some prices which would be more alluring.

Review of Conditions in the Metal Markets.

General Situation in the Steel Industry. Report of Prices and Tendencies in Sheet Metals, Pig Iron, etc.

Active Business for 1923

Seen in Non-Ferrous Industries.

With prices firm to strong and with considerable contracting for first quarter requirements, particularly of copper, there is every indication in the non-ferrous metals market that the first half of 1923 will be a period of active business, and with this as a general conviction in the metal industries buying and producing programs are being made accordingly.

With the automobile lines active, as well as the building trades, a sustained demand is seen.

Electrolytic copper is now firmly established at 14 cents or above. Lead is easy at 7.10 to 7.15 cents, and zinc is steady at 7.20 to 7.25 cents, East St. Louis. Tin has been erratic, with closing prices around \$37.37 to \$37.50.

Copper.

Buying of copper by domestic consumers continues fair at 14.00c delivered for shipment over the next three to four months. Moderate orders are also coming from abroad where the market is slightly easier in tone but, because of the advance in sterling exchange, the equivalent c.i.f. prices are higher than at any previous time in the last few months.

Fabricators have large orders on books and have been covering their copper requirements, thereby demonstrating their confidence in the 14c market. The reported acquisition of Chile by Anaconda Copper Mining Co., thereby removing the competition of the lowest cost producer, apparently supplied the needed stimulus to the market. Export sales have been fair, despite an advance of $\frac{1}{8}$ c in the export price to 14.15c to 14.20c, c.i.f. foreign port.

Zinc.

The market is quotable at 7.20c East St. Louis basis for prompt or

December prime Western, but futures into the first half of 1923 can be bought on a scale downward, and at the discounts now possible there has been quite a fair amount of future business placed by domestic consumers.

An active export business was done the past week in slab zinc, the shortage abroad still being pronounced. Fully 3,000 tons were sold for export in the week ended Dec. 8. Domestic inquiry, particularly from the galvanizers, has been slow and there are indications that a slight increase in stocks took place in November, due to increased production. Prime western zinc prices have ranged between 7.20 and 7.35c, East St. Louis, the past week. High grade has been selling at 8.25c, delivered.

Lead.

A rather easy tone is apparent in the outside lead market, but without anything approaching raggedness, the underlying conditions being quite stable. New orders for early shipment are not plentiful, but sellers have too much faith as yet in the continued needs over a fair period to incline them to drive the present market unduly.

Lead producers have been pressed to make deliveries under existing contracts, but new business is light. Offerings are equally light, so prices are holding steady. The American Smelting & Refining Co.'s official prices remain at 7.10c, New York, 6.90c, East St. Louis. Outside market prices are at 6.97 $\frac{1}{2}$ c, East St. Louis and 7.25c to 7.30c, New York. January shipment lead has sold at 7.25c, New York.

Solder.

Chicago warehouses quoted solder prices as follows: Warranted, 50-50, per 100 pounds, \$24.00; 50-50, per 100 pounds, \$25.00; \$23.50; and Plumbers', per 100 pounds, \$22.25.

Tin.

The tin market has continued to move erratically and to the bewilderment of the New York trade, which has been unable to gage the speculative trend at London. Fluctuations of £2 a day in London have been frequent, as the market there appears to be well under the control of a speculative clique. Tin has moved upward from about 36c to 37.50c. Ninety-nine per cent has been quoted about 1c under Straits Demand from American consumers has continued light.

The London bulls, led by Richard forced tin prices up again last week. Quotations in the domestic market showed a net gain of $1\frac{3}{8}$ cents at 37 $\frac{1}{2}$ cents for the earlier deliveries and positions Straits and Straits shipments. The far distant months command small premiums. The position of the bull operators was made somewhat easier by the gradual advance in sterling exchange during the week which closed nearly 5 cents higher.

Bolts and Nuts.

Slightly higher prices for bolts and nuts are anticipated in the Chicago territory. Consumers are holding off placing specifications for first quarter supplies and it seems probable the prices for this delivery will settle at about 5 points above the present discounts. In anticipation of the lower prices the market is relatively inactive. Producers of bolts and nuts find specifications on last quarter contracts are being filed liberally.

While in the same way some first quarter business has been placed on the books of Pittsburgh nut, bolt and rivet makers, this week marks the real start in efforts along this line. Large producers started Monday night to canvass their trade since inquiries were being received daily outlining first quarter requirements. The last named discounts



Cities are full of the remains of cornices such as illustrated above. Small wonder that owners are demanding their money's worth in Copper.

This Is Why Copper Cornices Are Now Being Put Up

PROPERTY owners have tired of paying for cornices made of inferior metals of which nothing but a rusty skeleton remains at the end of a few years.

New work is getting Copper not only as cornices, but also for flashings, leaders and gutters.

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COPPER & BRASS RESEARCH ASSOCIATION

25 Broadway - New York



The box-like blocks on the Jackson Heights roofs are Copper and will have a Copper balustrade joining them as shown in the small sketch. 16 to 24 ounces Copper is being used.

are being used as a basis in these negotiations. Spot demand involves from a single carload up to a few hundred tons at a time: In connection with rivets, the market seems to have settled to about 3.00c on structural and 3.10c, base Pittsburgh, on boiler rivets.

Nails and Wire.

Demand for wire and nails continues excellent and some buyers are asking that shipments be held up until after Jan. 1, indicating a desire not to carry heavy stocks through inventory. On account of present deferred deliveries, shipments would be after July 1 in any event. Generally prevailing open weather is helping demand for wire. Prices remain steady at 2.45c, Pittsburgh, wire and 2.70c, Pittsburgh, for nails.

Six to eight weeks seem to be the period nail buyers have to wait for deliveries even though nail plants are operating at 80 per cent, say Pittsburgh reports. Other wire products shipments likewise are deferred, but the heaviest demand appears to be for nails. While here and there jobbers are postponing purchases of mixed carloads of nails, wire and fencing, sizeable tonnages made up of this character of business will be closed after the first of the year.

Tin Plate.

By the end of this week tin plate specifications for March output will be in hand from large can makers and other consumers, according to Pittsburgh makers. This involves many thousands of base boxes since food container manufacturers universally are sanguine over prospects for tin plate consumption as are the manufacturers of general line cans.

For that reason these specifications for March delivery will doubtless come unsolicited. Now and then a call is made on manufacturers for fair sized tonnages of spot tin plate for filling out purposes and because stock lists have been so badly depleted it is impossible to grant the desired deliveries.

While large domestic customers have a preferential price, the regular

market remains unchanged at \$4.75 per base box of 100 pounds, Pittsburgh.

Sheets.

With both Chicago producers of steel sheets entirely sold up for first quarter delivery, consumers in this market find no alternative but to purchase their further requirements from mills in the valleys or near Pittsburgh.

Prices are nominally 2.50c for blue annealed, 3.35c for black and 4.35, Pittsburgh, for galvanized, and eastern makers appear to be following the same schedule.

Consumers in this district need more sheets than local producers can

furnish them and are placing tonnage elsewhere.

Old Metals.

Wholesale quotations in the Chicago district which should be considered as nominal are as follows: Old steel axles, \$18.00 to \$18.50; old iron axles, \$24.50 to \$25.00; steel springs, \$20.50 to \$21.00; No. 1 wrought iron, \$18.00 to \$18.50; No. 1 cast, \$16.00 to \$16.50, all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 9 cents; light brass, 5 cents; lead, 4¾ cents; zinc, 3¾ cents; and cast aluminum, 14 cents. The demand for nearly all lines is heavy.

Orders for First Quarter Delivery of Pig Iron Pass Million-Ton Mark and Buying Continues.

Melters Seeking Requirements in Chicago Market Find Market Firm at \$28, with Advance Expected.

AS GREAT activity in the pig iron market carried forward this week, recent estimates of 1,000,000 tons being closed for first quarter now appear to be well within the facts. And much buying is yet to be done.

New demands for iron and steel show up liberally and prospects for the first quarter of 1923 are promising. With a heavy tonnage already on mill books to be delivered next year a good foundation has been laid for the future steel market. Fresh tonnage at present is being taken in sufficient amount to replace shipments and this means at about the best rate in two years.

A favorable aspect of the situation is the greater confidence which manufacturing consumers especially are displaying in obligating themselves for material for forward delivery at prevailing prices. In some cases they are not able to get on mill books for all the tonnage they wish to engage.

Heavy selling of pig iron in lots of a few hundred tons to several thousand continues in the Chicago territory, the aggregate being fully equal to one-half of the first quarter production in this district. All

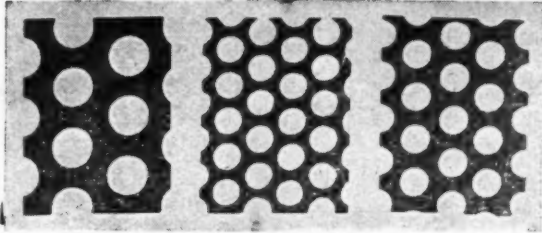
melters are seeking iron, and much is yet to be bought. There are some requests for contracts for the first half, but fuel uncertainty prevents makers quoting that far ahead.

The market now is firm at \$28, Chicago furnace, and an advance is expected shortly, as farther tonnages are being chosen by sellers. Lots of 10,000, 15,000 and 20,000 tons have been closed. Fully 40,000 tons of iron is actively on inquiry at the moment, and more is coming out each day.

Milwaukee melters are inquiring for 10,000 tons. One Milwaukee user has bought 5,000 tons of foundry and malleable, and another 1,500 tons of malleable. Chicago users are inquiring for 1,800 tons each, and a third for 3,000 tons. An Indiana user is asking for 7,500 tons. A furnace maker has bought 5,000 tons.

Lake Superior charcoal iron is unchanged. There is no demand. Inquiries are noted for 1,500 tons and 400 tons of low phosphorus iron. The sale of 1,000 tons is reported.

The sale of 200 tons of silveries at \$35.50, for 3 per cent, Jackson County furnace is noted.

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YOU SHOULD**

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You punch a hole like this, leaving the parts to be joined upset, as you see it here.

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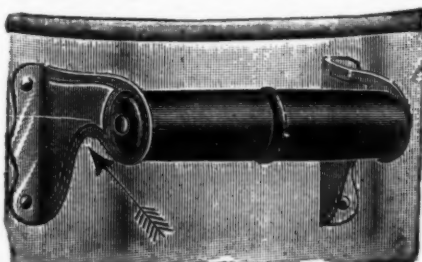
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WE HAVE a large stock from which you can secure all standard sizes and gauges of sheet steel. Corrugated sheets, galvanized, black or painted. Write us today for prices on your requirements. We make prompt shipments.

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SHEET COPPER, BOTTOMS, ROLL COPPER, TINNED AND
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THE "STANDARD" Ventilator



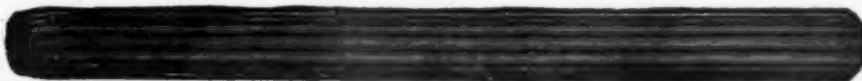
IS of the rotatable type and swings absolutely free in the slightest draft. The construction is scientifically correct and unusually strong. It works perfectly in all kinds of weather and handles 50% more air than stationary ventilators of equal size. Order from your jobber. Write for our catalog and prices today.

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Plecker's Galvanized Eave Trough and Corrugated Expanding Conductors

Made of
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Costs no more
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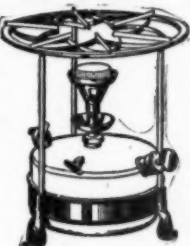
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have an extremely powerful flame. They are made of the best material that can be obtained and their construction insures long serviceability.

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DOUBLE BLAST Gasoline Burning FIRE POTS

You waste no heat or fuel when you use them because the **TWO** hot blast flames are forced to the center of the burner. The fuel always burns with a blue flame.

Our **No. 25 DOUBLE BLAST FIRE POT** shown here-with is guaranteed to heat soldering irons **TWICE AS FAST** as any other fire pot made, and with **ONE-HALF** the gasoline the others use.

This is an excellent fire pot and one that will stand up under hard use. We would be glad to give you more information and prices on this and other models.

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No. 15
List Price \$14.50 Each

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A test that would
shatter any other
Blow Torch made.

Our circular tells why.

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Sycamore, Ill. U.S.A.
OAK STREET

You Should Order NOW

your requirements of torches and furnaces for the coming winter. When the cold weather arrives you will then have a stock on hand, thereby enabling you to give your customers satisfactory deliveries.

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Most jobbers stock our line. Others will gladly order for you.

OTTO BERNZ CO., Newark, N. J.



No. 1 Fire Pot
List Price Each \$27.25
Ask for Discount

PLENTY OF PEP

Much time and money is saved in using the No. 1 Improved Double Blunt Needle Fire Pot. It burns the modern fuel perfectly, either gasoline or kerosene, producing 300 degrees more heat than other makes. A pot of metal and pair of heavy coppers can be quickly heated. Gas orifice can not be injured by forcing the Needle. It is cleared by using upper Needle, lower regulates the flame. Top Section is removable. The Ideal Fire Pot for either indoor or outside work. Jobbers supply at factory prices. Catalog upon request.

CLAYTON & LAMBERT MFG. CO.
10635 Knodell Ave. DETROIT, MICH., U.S.A.



Pat.
June 14, 1921

"HOTTEST BUILT WITHOUT A BLOWER"

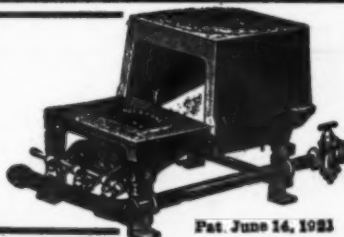
Buzzer—Automatic Blast Gas Soldering
Reg. U. S. Pat. Off. Furnaces and Soft Metal Furnaces

Will heat a pair of 14 lb. Coppers in 5 Minutes.

Pay for themselves in saving of Gas,
Soldering Coppers and time. Will last a lifetime.

Sent on 10 Days' Trial—Write for Catalogue of Full Line

CHAS. A. HONES, Inc. 123 Grand Avenue
BALDWIN, LONG ISLAND, N. Y.



Pat. June 14, 1921

MATS.	
Door.	
National Rigid.....	5 & 10 & 5%
Acme Steel Flexible.....	50%

MEASURES.	
Galvanized, doz.....	Nets
Japanned, doz.....	Nets

MITRES.	
Galvanized steel mitres, and caps, end pieces, outlets...	30%
Milcor.....	
Galv. one piece stamped.....	40%

MOPS.	
Cotton, Star (Cut Ends).	
Pounds 12' 15' 18' 24'-3-oz.	
Per doz \$4 00 4 35 5 50 7 00	
Enterprise.....	15%
Parker.....	50 & 5%

NAILS.	
Cut Steel.....	\$4 60
Cut Iron.....	4 60
Wire.....	
Common.....	3 45
Cement Coated.	
Small Lots.....	2 30

Horseshoe.	
Ausable.....	55 & 5%
Capewell.....	15%
Perfect.....	55 & 5%
Putnam.....	20 & 5%
Star.....	30 & 5%
Picture.	
Brass Heads.....	25%
Brads.....	70%
Furniture.....	List plus 15%

NETTING, POULTRY.	
Galvanized before weaving.....	50%
Galvanized after weaving.....	40%

NIPPERS.	
Nail Cutting.	
V. & B. No. 30.....	78c
Double Duty.	
V. & B. No. 60.....	76c
Hoof.	
Heller's.....	40 & 10%
V. & B., No. 52, each.....	\$2 25

NOZZLES.	
Magic.....per doz.	\$9 50
Diamond.....	5 75

OILERS.	
Chase Pattern.	
Brass and Copper.....	10%
Zinc Plated.....	40 & 5%
Railroad.	
Brass.....	20 & 5%
Coppered.....	50 & 5%
Steel.....	
Copper Plated.....	70 & 5%

OPENERS.	
Can.	
Delmonico.....per doz.	\$1 30
Never Slip.....	65
Crane.	
V. & B.....per doz.	\$7 25-11 00

PAIS.	
14-qt. without gauge.	
18-qt. without gauge.....per doz.	\$9 50
14-qt. without gauge.....per doz.	11 00
20-qt. without gauge.....per doz.	11 75

Sap.	
10-qt., IC Tin.....per doz.	\$4 00
12 ".....	6 50
Stock.	
Galv. qts. 14 16 18 20	
Per doz \$9 75 10 75 12 75 14 50	

Water.	
Galvanized qts. 10 12 14	
Per doz.....\$5 75 6 50 7 25	
Wood.	
Cable, 2-Hoop.....per doz.	Nets
Cable, 3-Hoops.....	" Nets
Cable, 3-Hoops, brass " "	" Nets

PANS.	
Dripping.....	Net
Fry.....	
Common.....	Nets
Acme.....	"
Roasting.	
Paxton.	
Nos. 1 2 3 4	
Per doz.....	Nets

PAPER.	
Roofing.	Per Square
Best grade, slate surf. prep'd.	\$1 85
Best talc surfaced.....	3 25
Medium talc surfaced.....	1 60
Light talc surfaced.....	0 90
Red Rosin Sheathing, per ton	55 00

PICKS.	
Contractors'.....	40%
Railroad.....	50 & 5%

PINCERS.	
All V. & B.	
Carpenters', cast steel.	
No.....	6 8 10 12
Each \$0 43 \$0 52 \$0 61 \$0 71	
Blacksmiths', No. 10.....	\$0 64

PINS.	
Clothes.	
Common, per box of 5 gro.	\$0 95

PIPE.	
Conductor.	
"Interlock" Galvanized.	
Crated and nested (all gauges).....	60-20%
Crated and not nested (all gauges).....	60-15%

Square Corrugated A and B and Octagon.	
29 Gauge.....	65%
28 ".....	65%
26 ".....	65%
24 ".....	65%

"Interlock."	
Crated and nested (all gauges).....	60-20%
Prices for Galvanized Toncan	

Metal, Genuine O. H. Iron, Lyonmore Metal and Keystone C. B. on application.	
Stove.	Per 100 joints
26 gauge, 5 inch E. C.	
nested.....	15 40
26 gauge, 6 inch E. C.	
nested.....	16 50
26 gauge, 7 inch E. C.	
nested.....	18 70
28 gauge, 5 inch E. C.	
nested.....	13 20
28 gauge, 6 inch E. C.	
nested.....	14 30
28 gauge, 7 inch E. C.	
nested.....	16 50
30 gauge, 5 inch E. C.	
nested.....	11 00
30 gauge, 6 inch E. C.	
nested.....	12 10
30 gauge, 7 inch E. C.	
nested.....	14 30

T-Joint Made up.	
6-inch.....per 100	38 50
Furnace Pipe.	
Double Wall Pipe and Fittings.....	40%
Single Wall Pipe, Round Pipe Fittings.....	40%
Galvanized and Back Iron Pipe, Shoes, etc.....	40%
Milcor, galvanized.....	40%

PLANES.	
Stanley Iron Bench.....	Net

PLIERS.	
Nut, No. 3, each.....	\$2 60
" No. 5, each.....	64
" No. 25, each.....	69
Gas, No. 7, each.....	55
" No. 8, each.....	61
" No. 12, each.....	87

Lining or Crimping.	
No. 35, each.....	64
Button's Pattern.	
No. 6 each.....	61
No. 8 each.....	74
Double Duty, No. 106.....	50

POINTS, GLAZIERS.	
No. 1, 2 and 3.....per doz. pkgs.	65c

POKERS, STOVE.	
Wrt Steel, str't or bent.	
Nickel Plated, coll han's.....per doz.	\$0 75
".....	1 10

PULLEYS.	
Awning—Jap'd.....	10%
Clothes Line.....	10%
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Iron Wheel, 5-in.....per doz.	\$2 50
Wood Wheel, 6-in. ".....	2 65
Wood Wheel, 6-in. pass knot.....	3 00

Sash.	
Common.....	Net
Common-Sense, 2-in.....	Net
Empire Pattern, 2-in.....	Net
Ideal.....	Net
Steel.....	Net

PUMPS.	
Spray.	
Midget Junior.....per doz.	\$3 75
New Misty.....	6 00
Crescent.....	6 50

PUNCHES.	
Machine.	Each
V. & B., No. 11-13, 1/2x6.....	\$1 19
V. & B., No. 90, 1/2x9.....	27
V. & B., No. 10, 1/2x10.....	29
V. & B., No. 1-6, 1/2x6.....	12

Center.	
V. & B., No. 50, 1/2x4.....	14
Belt.	
V. & B., No. 101-103.....	24
V. & B., No. 103-109.....	33
V. & B., No. 25, asst.....	3 80
Parker Metal Punch No. OX.....	each \$7 00
Parker Extra Punch.....	30
Parker Extra Die.....	40
Whitney's Ball Bearing.....	Prices on application

Apple.	
Goodell's.....per doz.	\$10 80
Turntable.....	11 40
White Mountain.....	8 40
Reading No. 78.....	11 40

PUTTY.	
Commercial Putty, 100-lb.	
Kits.....	\$3 60

RAKES.	
Garden.	Per doz.
Steel, Bow, 12-inch Teeth.....	\$8 50
Steel, Bow, 14-inch ".....	9 25
Malleable Iron, 12-in. ".....	4 75
Malleable Iron, 14 in. ".....	5 00

Hay.	
Wood, 10 Teeth.....	\$4 00
Lawn.	
30 Teeth.....per doz.	5 50

RAZORS—SAFETY.	
Gillette.....per doz.	\$45 00
Auto Strop.....	45 00
Gem.....	4 40
Gem (3 doz. lots).....	8 00
Ever Ready.....	8 40
Ever Ready (3 doz. lots).....	8 00

RAZORS STRAIGHT.	
RAZOR STROPS.	
Star (Honing).....	50%

FLOOR REGISTERS AND BORDERS.	
Cast Iron.....	15%
Steel and Semi-Steel.....	30%
Baseboard.....	30%
Adjustable Ceiling Ventilators.....	30%
Register Faces—Cast and Steel Japanned, Bronzed and Plated, 4x6 to 14x14.....	20%
Large Register Faces—Cast, 14x14 to 38x42.....	50%
Large Register Faces—Steel, 14x14 to 38x42.....	60%

REGULATORS.	
(Parker Dial Damper with Bearings.)	
Each.....	\$ 50
Per doz.....	5 50

RIDGE ROLL.	
Galvanized.	
Milcor.....	
Plain, crated.....	75%
Plain, bundled.....	75-2 1/2%

RIVETS.	
Copper Belt.....	50% Discount
Coppered Iron.....	50%
Tinners'.....	50%
Home.....per lb.	\$0 17
Slotted Clinch per doz.	60 @ 1 10

Tubular.	
Nos. 1 and 2 assorted sizes.	
50 in box.....doz.	75c
Nos. 1 and 2 assorted sizes.	
10 in box.....doz.	1 40

COTTON.	
1/4, 5-16 in. and larger.	
per lb.....	50c to 60c
Sisal.	
1st Quality, base 1 1/4c to 1 1/2c	
No. 2.....	12 1/2c to 14 1/2c

Manilla.	
1st Quality standard brands.....	16 1/2c to 18 1/2c
No. 2.....	15 1/2c to 16 1/2c
Hardware Grade, per lb.	15 1/2c

SAWS.	
Butchers'.	
Atkins No. 2, 14-in.....	\$12 75
" No. 2, 18-in.....	14 30
" No. 7, 16-in.....	15 85
" No. 2, 22-in.....	15 92
" No. 7, 20-in.....	18 05
" No. 7, 24-in.....	20 20
" No. 7, 28-in.....	22 35

Compass.	
Atkins No. 2, 10-in.....	\$ 6 45
" No. 10, 10-in.....	5 60
" Blades, No. 2, 10-in.	3 25
" No. 2, 10-in.	3 30

Cross-Cut.	
Atkins No. 221, 4-ft.....	3 03
" No. 221, 6-ft.....	4 45
" No. 221, 8-ft.....	6 07

Flooring, Hand.	
Atkins No. 96, 16-in.....	20 45
" No. 96, 20-in.....	21 70

Hand and Rip.	
Atkins No. 54, 20-in.....	19 50
" No. 54, 26-in.....	24 40
" No. 52, 16-in.....	18 10
" No. 53, 20-in.....	22 90
" No. 53, 24-in.....	26 60
" No. 53, 28-in.....	31 45
" No. 53, 30-in.....	34 15

Keyhole.	
Atkins No. 1, complete..	3 10
" No. 2, complete..	3 70

Miter Box.	
Atkins No. 1, 4x20.....	32 65
" No. 1, 5x22.....	38 00
" No. 1, 6x25.....	42 20

Pruning.	
Atkins No. 20, 12-in....	8 45
" No. 10, 16-in....	18 15

Wood.	
Atkins No. 202.....	7 19
" No. 318.....	8 75
" No. 906.....	15 50
" No. 1509.....	16 55

SCOOPS.	
Hubbard Western Pattern Riveted.	
Size A B C D	
1.. \$16 75 16 00 15 25 14 45	
4.. 17 85 17 10 16 35 15 60	
6.. 18 65 17 85 17 10 16 35	

SCRAPERS.	
Box.	
No. 6, six blades, each....	25c
Hog.	
No. 6, each.....	25c
Floor (Stearns).	
No. 10, each.....	\$11 50

SCREEN DOOR HINGES.	
Cast iron.....gross	\$12 00
Steel.....	9 50

SCREWS.	
Jack.....	Standard List 45%
Lag or Coach—all sizes,	
gimlet pointed.....	40-10%

Wood.	
F. H. Bright.....	82-5%
R. H. Blued.....	75-20-5%
F. H. Jap'd.....	70-20-5%
F. H. Brass.....	75-5%
R. H. Brass.....	70-20-5%

Sheet Metal.	
No. 7, 1/2x1/2, per gross..	\$ 55
No. 10, 1/2x3/16, per gross..	75
No. 14, 1/2x1/2, per gross..	90

SCREW DRIVERS.	
Uncle Sam Standard Head.	
3 inches, each.....	\$ 45
5 inches, each.....	52
8 inches, each.....	68
12 inches, each.....	1 02

Uncle Sam Insulated Head	
3 inches, each.....	\$ 49
5 inches, each.....	57
8 inches, each.....	76
12 inches, each.....	1 14

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||

ADVERTISED NATIONALLY**That's Why It's Easy to Sell**

A powerful general utility punch. Perforates cardboard, leather and paper up to $\frac{1}{4}$ ". Thru untempered metal up to 20 gauge. Made of Drop Forge Steel. Handles interchangeable punches and dies as illustrated. You'll sell them fast. Order NOW from your jobber.



Tool with 1 Punch and Die Retail **\$3**

Tool, with complete set of 6 Punches and Dies. Retail Price Complete **\$5.00**

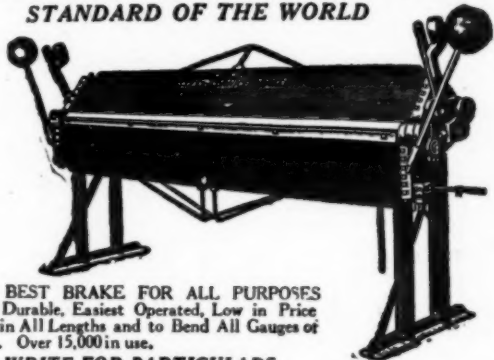
SAMSON No. 1 HAND PUNCH

Write for Catalogue and our attractive proposition. Chicago Agents: Carr Supply Co., 412 N. Dearborn St.

MACHINE APPLIANCE CORPORATION

351 Jay Street

Brooklyn, N. Y.

CHICAGO STEEL CORNICE BRAKES
STANDARD OF THE WORLD

THE BEST BRAKE FOR ALL PURPOSES Most Durable, Easiest Operated, Low in Price Made in All Lengths and to Bend All Gauges of Metal. Over 15,000 in use.

WRITE FOR PARTICULARS

DREIS & KRUMP MFG. CO., 2915 S. Halsted Street, CHICAGO**MARSHALLTOWN****Throatless Shears**

HERE is a machine that will do all your sheet cutting. It takes sheets of any size and does accurate work quickly. It is our No. 18 Hand Power Shear, the size for the average shop. It is high grade throughout, being made of the strongest and toughest metals. It sells at a price which makes it possible for you to own one NOW.

Covered By Patent No. 1020508

Address Dept. A. A. and ask for our catalog and price list covering our entire line.

MARSHALLTOWN MFG. CO., Marshalltown, Iowa**TREADLE SHEAR**

This TREADLE GAP SHEAR is made in all standard sizes for No. 14 and lighter gauge sheets. With it, sheets can be squared, trimmed or slit.

We make a complete line of shears, punches and bending rolls, all sizes for hand or belt drive. Write for Catalog "S."

BERTSCH & COMPANY

Cambridge City, Ind.

PEERLESS EAVES TROUGH HANGER

Send Ten Cents in Stamps for a Sample and 25¢ Will Be Credited on Your First Order.

ABBOTT MFG. CO.
4700 Central Ave. S. E.

CLEVELAND

OHIO

**COES**

FOR the customer who wants a Screw Wrench to do all sorts of work—to stand up under all kinds of strains—the Coes Steel Handle is the kind to sell.

An all-steel wrench, properly heat treated, wearing parts hardened.

The ideal wrench for "all-round rough use."

How is Your Steel-Handle Stock?

Coes Wrench Co.

ESTABLISHED 1841 IN

Worcester, Mass.

J C McCARTY & CO., 29 Murray Street, New York

JOHN H. GRAHAM & CO.,

113 Chambers St., New York

FENWICK FRERES, 8 Rue de Reccoy, Paris, France

**STEEL HANDLE****WIRE**

electrical, rope, airplane, piano, pipe organ, flat wire (strip steel) hoops, bale-ties, tacks, nails, barbed-wire, concrete reinforcement,

springs, netting, wire fences, steel posts, steel gates, trolley wire and rail bonds, wire wheels, auto-towing cables, horse shoes, round and odd-shape wires for manufacturing, screw-stock.

Illustrated books describing uses, FREE

American Steel & Wire

Chicago—New York

Company

LIGHTNING STOVE PIPE MACHINES

Save time, money and labor. The LIGHTNING STOVE PIPE MACHINE is the only one on the market that will rapidly and perfectly close the seams or groove Nested Stove Pipe. Can be attached to any post, wall or bench. It is adjustable to all sizes and gauges of Stove Pipe, Furnace Pipe and other Sheet Metal articles. Simple, Rapid, Noiseless.

Write for particulars



Manufactured by

HEMP & CO., St. Louis, U.S.A.

SHEARS.		Per Doz.
Nickel Plated, Straight, 6"	12 90	
" " " " 7"	14 85	
" " " " 8"	16 80	
Japanned, Straight, 6"	11 00	
" " " " 7"	12 40	
" " " " 8"	13 80	

SHEAVES, SLIDING DOOR.		
Common.	3	4
Inches	1 40	1 75
Per set	2 40	2 40

Hatfield's.	2 10	2 75	25
Per set	\$1 80	2 10	2 75

SHINGLES.		Per Square
Zinc (Illinois)	.....	\$15 00

SHOES.		
Galv. Std. gauge, Plain or	.....	65¢
26 gauge round flat crimp.	.....	45¢
24 gauge round flat crimp.	.....	15¢

Square Corrugated.		
Standard gauge	.....	50%
26 gauge	.....	35%
Conductor	.....	60¢

SHOVELS AND SPADES.		
Coal.		
Hubbard's.		
No. A B C D		
1 \$16 00 15 10 14 45 13 70		
2 16 35 16 60 14 85 14 10		
3 16 75 16 00 16 25 14 45		
4 17 10 16 35 16 60 14 85		

Post Drains & Ditching.		
Hubbard's.		
Size A B C		
14" 17 15 16 40 15 65		
16" 17 50 16 75 16 00		
18" 17 85 17 10 16 85		
20" 18 20 17 45 16 70		
22" 18 55 17 80 17 05		

Alaska Steel.		
D-Handle	.....	per doz. \$3 50
Long Handle	.....	3 00

SKATES.		
Roller.		
Ball Bearing—Boys'	.....	\$1 50
Ball Bearing—Girls'	.....	1 60

Ice.		
Key Clamp Rocker, Men's	.....	0 70
and Boys'	.....	0 70
Key Clamp Rocker, Men's	.....	1 03
and Boys'	.....	0 96
Half Key Clamp Hockey.	.....	0 96
Women's and Girls'	.....	0 96

SNAPS, HARNESS.		
Covered Spring	.....	Add 30%
Judd's Pattern	.....	Add 33 1-6% to list

SNATHS.		
Double Ring Bush.	.....	per doz. \$9 75
Patent Loop, Bush.	.....	10 00
Patent Loop, Grass.	.....	8 75

SNIPS, TINNERS'.		
Clover Leaf	.....	40&10%
National	.....	40&10%
Star	.....	50%
Milcor	.....	Net

SPRINGS, DOOR.		
Perfect.		
Nos. 2 3 4 5 6 7		
Per doz. 45c 50c 55c 65c 80c 90c		

Relliance.		
Light Medium Heavy		
Per doz. \$1 80 2 40 3 75		
Torrey's	.....	per doz. 1 65

SQUARES.		
Steel and Iron	.....	Net
(Add for bluing, \$3.00 per doz. net)		
Mitre	.....	"
Try	.....	"
Try and Bevel	.....	"
Try and Miter	.....	"
Fox's	.....	per doz. \$6 00
Winterbottom's	.....	10%

STAPLES.		
Blind.		
Barbed	.....	per lb. 21@22c
Butter, Tub.	.....	16@19c

Fence—		
Polished	.....	per 100 lbs. \$5 45
Galvanized	.....	6 15

Netting.		
Galvanized	.....	per 100 lbs. 6 54

Wrought.		
Wrought Staples, Hasps and		
Staples, Hasps, Hooks and		
Staples, and Hooks and		
Staples	.....	50&10%
Extra heavy	.....	35%

STONES.		
Axe.		
Hindustan	.....	per lb. New Nets
More Grit	.....	"
Washita	.....	"

Emery.		
No. 128	.....	per doz. New Nets

Oil—Mounted.		
Arkansas Hard		
No. 7	.....	per doz. New Nets
Arkansas Soft	.....	"
Washita No. 717	.....	"

Oil—Unmounted.		
Arkansas Hard	.....	per lb. New Nets
Arkansas Soft	.....	"
Lily White	.....	"
Queer Creek	.....	"
Washita	.....	"

Scythe.		
Black Diamond	.....	per gro. New Nets
Crescent	.....	"
Green Mountain	.....	"
LaMolle	.....	"
Extra Quinne-	.....	"
bog	.....	"
Red End	.....	"

STOPS, BENCH.		
No. 10 Morrill pat-		
tern	.....	per doz. \$11 00
No. 11 Stearns pat-		
tern	.....	10 00
No. 15 Smith pattern	.....	7 00

STOPPERS, FLUE.		
Common	.....	per doz. \$1 10
Gem, flat, No. 3	.....	1 00
Gem, No. 1	.....	1 10

STRETCHERS.		
Bullard's	.....	per doz. \$3 90
Excelsior	.....	5 25
Malleable Iron	.....	70
Perfection	.....	6 30
King	.....	4 50

Wire.		
O. S. Elwood, No. 1	.....	per doz. Nets
O. S. Elwood, No. 2	.....	"

SWIVELS.		
Malleable Iron	.....	per lb. \$0 10
Wrought Steel	.....	per gro. 4 50

TACKS.		
Bill Posters' 6-oz. 25-lb. boxes	.....	per lb. 15c
Upholsterers' 6-oz. 25-lb. boxes, per lb.	.....	15 1/4c

TAPES, MEASURING.		
Asses' Skin	.....	List&40%

THERMOMETERS.		
Tin Case	.....	per doz. 80c&\$ 1 25
Wood Back	.....	\$2 00& 12 00
Glass	.....	12 00

TIES.		
Bale.		
Single Loop, carload	.....	75&7%
Single Loop, less than car lots	.....	70&15%

TRAPS.		
Mouse and Rat.		
Sure Catch Mouse Traps	.....	\$ 2 10
Vim Mouse Traps	.....	2 10
Short Stop Mouse Traps	.....	1 80
Wood Choker Mouse	.....	10 25
Traps, 4 hole	.....	10 25

Sure Catch Rat Traps.		
Dead Easy Rat Traps	.....	\$0 80
Packed in One Bushel Band Stave Baskets.	.....	List per bushel

Sure Catch Mouse Traps		
(360 Traps)	.....	\$ 5 25
Short Stop Mouse Traps	.....	4 50
(360 Traps)	.....	4 50
Sure Catch Rat Traps (54 Traps)	.....	3 60
Short Stop Rat Traps (54 Traps)	.....	3 15

Assorted Mouse and Rat Traps.		
Sure Catch (216 Mouse Traps and 26 Rat Traps)	.....	\$4 90
Short Stop (216 Mouse Traps and 26 Rat Traps)	.....	4 25

Cement.		
Atkins No. 6	.....	19 50
No. 9	.....	25 50

TROWELS.		
White Cotton.		
Eureka, 4-ply	per lb. 30c

TWINE.		
Jute.		
3-ply and 6-ply Bale Lots	22 1/2c

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Bertsch & Co.	41	Melbye Bros. Co.	—
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Bradley Polytechnic Institute.	—	Meyer Furnace Co.	—
Bullard & Gormley Co.	51	Meyers Mfg. Co., Fred J.	50
Burgess Soldering Furnace Co.	—	Michigan Stove Co., The.	—
Burton Co., W. J.	—	Milwaukee Corr. Co., Back Cover	—
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Chicago Solder Co.	35	Mt. Vernon Furnace & Mfg. Co.	—
Clark & Co., Geo. M.	—	New Jersey Zinc Co., The.	—
Clark-Smith Hardware Co.	37	Novelty Advertising Co.	—
Clayton & Lambert Mfg. Co.	39	Osborn Co., The J. M. & L. A.	37
Cleveland Castings Pattern Co.	6	Parker Supply Co.	35
Coes Wrench Co.	41	Peck, H. E.	45
Copper and Brass Research	—	Penn. and Atlantic Seaboard	—
Association	33	Hd., Assn.	45
Copper Clad Malleable Range	—	Premier Warm Air Heater Co.	—
Cornish & Co., J. B.	51	Quick Meal Stove Co.	39
Cortright Metal Roofing Co.	—	Quincy Pattern Co.	6
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Gohmann Bros. & Kahler.	9	Turner Brass Works.	39
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Hussey & Co., C. G.	37	Zideck Auto Radiator School.	6
Hyfield Mfg. Co.	—		
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Independent Steel Co.	—		
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AMERICAN ARTISAN
AND
HARDWARE RECORD
when writing to advertisers

VALLEY.		
Milcor		
Galv. formed or roll.	.....	60%

VISES.		
No. 700, Hand.		
Inches	4 1/2	5
Doz.	\$11 15	13 00
No. 701, In.	4	5
Doz.	\$11 15	13 00
No. 1, Genuine Wentworth,		
Noiseless Saw	.....	9 25
No. 3, Genuine Wentworth,		
Noiseless Saw	.....	12 75
No. 500, All Steel Folding		
Saw	.....	per doz. 16 00

WASHERS.		
Cast.		
Over 1/2 in. barrel lots,		
per 100 lbs.	.....	\$6 25
Iron and Steel.		
In.	5/16	3/4
	10 1/4c	9 1/4c
	7 1/4c	7 1/4c
	7 1/4c	7 1/4c

WEATHER STRIPS.		
Metallic Stitched.		
1/2 in., per 100 ft.	.....	\$1 80
3/4 in., per 100 ft.	.....	2 20
Wood & Felt.		
1/2 in., per 100 ft.	.....	1 55
3/4 in., per 100 ft.	.....	1 55

WEDGES.		
Ax.	.....	per doz. Nets
Galling	.....	per lb. Nets
Saw	.....	per lb. 8 1/4c

WEIGHTS.		
Hitching	.....	per lb. Nets
Sash—f. o. b. Chicago	.....	50 00
Smaller lots, per ton	.....	50 00

WHEEL BARROWS.		
Common Wood Tray	.....	\$3 00
Steel Tray	.....	4 50
Angle leg, garden	.....	5 75

WHEELS.		
Carborundum	50%
Emery	60%
Well, Ins.	8	10
Per doz.	\$5 50	7 25
12-in. heavy hoisting,		
per doz.	\$25 00

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